Paraprofessionals for anxiety and depressive disorders

den Boer, Peter C A M; Wiersma, Durk; Russo, Sacha; van den Bosch, Rob J

Published in:
Cochrane Database of Systematic Reviews

DOI:
10.1002/14651858.CD004688.pub2

Publication date:
2005

Cochrane Library

Cochrane Database of Systematic Reviews

Paraprofessionals for anxiety and depressive disorders (Review)

Boer PCAM, Wiersma D, Russo S, Bosch RJ

Boer PCAM, Wiersma D, Russo S, Bosch RJ.
Paraprofessionals for anxiety and depressive disorders.
Cochrane Database of Systematic Reviews 2005, Issue 2. Art. No.: CD004688.
DOI: 10.1002/14651858.CD004688.pub2.

www.cochranelibrary.com

WILEY

TABLE OF CONTENTS

HEADER . . . 1
ABSTRACT . . . 1
PLAIN LANGUAGE SUMMARY . . . 2
BACKGROUND . . . 2
OBJECTIVES . . . 3
METHODS . . . 4
RESULTS . . . 6
DISCUSSION . . . 10
AUTHORS' CONCLUSIONS . . . 11
ACKNOWLEDGEMENTS . . . 12
REFERENCES . . . 12
CHARACTERISTICS OF STUDIES . . . 15
DATA AND ANALYSES . . . 23
Analysis 1.1. Comparison 1 Paraprofessionals vs professionals - post treatment, Outcome 1 Continuous data (reduction in symptom severity). . . . 32
Analysis 2.1. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 1 Continuous data (reduction in symptom severity). . . . 33
Analysis 2.2. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 2 Dichotomous data (remission versus no remission). . . . 34
Analysis 2.3. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 3 All data; generic inverse variance. . . . 35
Analysis 2.4. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 4 Heterogeneity analysis (Barnett 1985 removed). . . . 36
Analysis 3.1. Comparison 3 Paraprofessionals vs professionals - follow-up, Outcome 1 Continuous data (reduction in symptom severity). . . . 37
Analysis 4.1. Comparison 4 Paraprofessionals vs control (waiting list/placebo) - follow-up, Outcome 1 Continuous data (reduction in symptom severity). . . . 38
Analysis 5.1. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 1 Paraprofessionals vs professionals (post treatment): moderate-high quality (QRS =22-42). . . . 39
Analysis 5.2. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 2 Paraprofessionals vs professionals (post treatment): low quality (QRS = 0-21). . . . 40
Analysis 5.3. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 3 Paraprofessionals vs control (post treatment): moderate to high quality (QRS=22-42). . . . 40
Analysis 5.4. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 4 Paraprofessionals vs control (post treatment): low quality (QRS = 0-21). . . . 41
Analysis 6.1. Comparison 6 Sensitivity analysis: allocation concealment, Outcome 1 Paraprofessionals vs professionals - post treatment. . . . 42
Analysis 6.2. Comparison 6 Sensitivity analysis: allocation concealment, Outcome 2 Paraprofessionals vs control (waiting list/placebo) -post treatment. . . . 43
Analysis 7.1. Comparison 7 Sensitivity analysis: self-report and observer-rated scales, Outcome 1 Paraprofessionals vs professionals - post treatment. . . . 44
Analysis 8.1. Comparison 8 Sensitivity analysis: intention-to-treat and per protocol analysis, Outcome 1 Paraprofessionals vs professionals - post treatment. . . . 45
Analysis 8.2. Comparison 8 Sensitivity analysis: intention-to-treat and per protocol analysis, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. . . . 46
Analysis 9.1. Comparison 9 Sensitivity analysis: one comparison and two or more comparisons with same control condition, Outcome 1 Paraprofessionals vs control (waiting list/placebo) - post treatment. . . . 47
Analysis 10.1. Comparison 10 Sensitivity analysis: small and moderate/large sample size, Outcome 1 Paraprofessionals vs professionals - post treatment. . . . 48
Analysis 10.2. Comparison 10 Sensitivity analysis: small and moderate/large sample size, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. . . . 49

Analysis 11.1. Comparison 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion, Outcome 1 Paraprofessionals vs professionals - post treatment. 50
Analysis 11.2. Comparison 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 51
Analysis 13.1. Comparison 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background, Outcome 1 Paraprofessionals vs professionals - post treatment. 52
Analysis 13.2. Comparison 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 53
Analysis 14.1. Comparison 14 Subgroup analysis: (a) anxiety and (b) depressive disorders, Outcome 1 Paraprofessionals vs professionals - post treatment. 54
Analysis 14.2. Comparison 14 Subgroup analysis: (a) anxiety and (b) depressive disorders, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 55
Analysis 15.1. Comparison 15 Subgroup analysis: (a) individual and (b) group interventions, Outcome 1 Paraprofessionals vs professionals - post treatment. 56
Analysis 15.2. Comparison 15 Subgroup analysis: (a) individual and (b) group interventions, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 57
Analysis 16.1. Comparison 16 Subgroup analysis: (a) same and (b) different interventions performed by paraprofessionals and professionals, Outcome 1 Paraprofessionals vs professionals - post treatment. 58
Analysis 17.1. Comparison 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment, Outcome 1 Paraprofessionals vs professionals - post treatment. 59
Analysis 17.2. Comparison 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 60
Analysis 19.1. Comparison 19 Subgroup analysis: gender, Outcome 1 Paraprofessionals vs professionals - post treatment. 61
Analysis 19.2. Comparison 19 Subgroup analysis: gender, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment. 62
Analysis 24.1. Comparison 24 Controlling for heterogeneity: paraprofessionals vs control - post treatment, Outcome 1 All data; generic inverse variance. 63
Analysis 25.1. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 1 Paraprofessionals vs control - post treatment: moderate to high quality (QRS =22-42) (n=3). 64
Analysis 25.2. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 2 Paraprofessionals vs control - post treatment: moderate to high quality (QRS=22-42) (n=2). 64
Analysis 25.3. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 3 Paraprofessionals vs control - post treatment: low quality (QRS = 0-21). 65
Analysis 26.1. Comparison 26 Final analyses, Outcome 1 Paraprofessionals vs professionals: post treatment - re-analysis. 66
Analysis 26.2. Comparison 26 Final analyses, Outcome 2 Paraprofessionals vs control (waiting list/placebo): post treatment - re-analysis. 67
WHAT'S NEW 67
HISTORY 67
CONTRIBUTIONS OF AUTHORS 67
DECLARATIONS OF INTEREST 68
SOURCES OF SUPPORT 68
INDEX TERMS 68

[Intervention Review]

Paraprofessionals for anxiety and depressive disorders

Peter CAM Boer[1], Durk Wiersma[2], Sacha Russo[3], Rob J Bosch[1]

[1]Department of Psychiatry, University Hospital Groningen, Groningen, Netherlands. [2]Department of Psychiatry (k 5.21), Rob Giel Research Centre, University of Groningen, Groningen, Netherlands. [3]University Medical Centre Groningen, Groningen, Netherlands

Contact address: Peter CAM Boer, Department of Psychiatry, University Hospital Groningen, P.O. Box 30001, Groningen, 9700 RB, Netherlands. p.c.a.m.den.boer@acggn.umcg.nl.

Editorial group: Cochrane Common Mental Disorders Group.
Publication status and date: Unchanged, published in Issue 1, 2010.
Review content assessed as up-to-date: 16 February 2005.

Citation: Boer PCAM, Wiersma D, Russo S, Bosch RJ. Paraprofessionals for anxiety and depressive disorders. *Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD004688. DOI: 10.1002/14651858.CD004688.pub2.

ABSTRACT

Background

The established mental health care system does not have the resources to meet the extensive need for care of those with anxiety and depressive disorders. Paraprofessionals partially replacing professionals may be cost-effective.

Objectives

To investigate the effectiveness of any kind of psychological treatment for anxiety and depressive disorders performed by paraprofessionals. To examine whether the results apply to clinically significant disorders.

Search methods

CCDANCTR-Studies, EMBASE (ExerptaMedica), MEDLINE, PsycINFO, all years published using the key words: para-/paraprofessional, non-/nonprofessional, rand*, psy*; peer; volunt*; citation lists of articles reviewing the subject and included studies; correspondence with authors of controlled studies, and review reports on the subject.

Selection criteria

Randomised controlled trials that used symptom measures, and compared the effects of treatments given by paraprofessionals (paid or voluntary, unqualified with respect to the psychological treatment) with treatments given by professionals, and with waiting list or placebo condition.

Data collection and analysis

The standard mean difference was used to pool continuous data, and odds ratios were used to pool dichotomous data, using a random effects model. The generic inverse variance method was used for combining continuous and dichotomous data. The effect of low quality studies and the use of self-rated versus observer-rated measures were tested. Subgroup analyses were performed for differences between depression and anxiety diagnosis, paraprofessionals with/without professional background, group/individual intervention, length of follow-up and gender (post-hoc subgroup analysis).

Main results

Five studies reported five comparisons of paraprofessionals versus professionals (n=106) and five comparisons of paraprofessionals versus control condition (n=220). No differences were found between paraprofessionals and professionals (SMD=0.09, 95% CI -0.23 to 0.40, p=0.58), and no significant heterogeneity. Studies comparing paraprofessionals versus control (mixed continuous and dichotomous data) showed a significant effect in favour of paraprofessionals (OR=0.34, 95% CI 0.13 to 0.88, p=0.03), but heterogeneity was indicated (I^2=60.9%, Chi^2= 10.24, df=4, p=0.04). After correction for heterogeneity and removing one study of low quality, the pooling of data from three studies (n=128; mixed gender; women) indicated no significant difference in effect between paraprofessionals and professionals (SMD=0.13, 95% CI -0.39 to 0.64; p=0.63) and a strongly significant pooled effect for three studies (n=188; women) favouring paraprofessionals over the control condition (OR=0.30, 95% CI 0.18 to 0.48, p<0.00001), and homogeneity indicated between studies (I^2=0%, Chi^2=0.47, df=2, p=0.79).

Authors' conclusions

The few studies included in the review did not allow conclusions about the effect of paraprofessionals compared to professionals, but three studies (women only) indicated a significant effect for paraprofessionals (all volunteers) compared to no treatment. The evidence to date may justify the development and evaluation of programs incorporating paraprofessionals in treatment programs for anxiety and depressive disorders.

PLAIN LANGUAGE SUMMARY

The involvement of paraprofessionals for anxiety and depressive disorders

The established mental health care system does not have the resources to meet the increasing need for care of those with anxiety and depressive disorders. This review investigated the effectiveness of any kind of psychological treatment conducted by paraprofessionals. The few studies found did not allow conclusions about the effect of paraprofessionals compared to professionals in the treatment of anxiety and depressive disorders. Pooling data from three studies, involving women only, indicated a significant effect for paraprofessionals compared to no treatment. The evidence so far may justify the development and evaluation of programs incorporating paraprofessionals in treatment programs for anxiety and depressive disorders.

BACKGROUND

Anxiety and depressive disorders have been recognised as a highly prevalent problem in mental health care. Given the large degree of co-morbidity and the overlap in therapeutic approaches between anxiety and depression, they are considered together in this review. Observational studies indicate that 53.7% of psychiatrists' routine caseload concern mood disorders and 9.3% comprise anxiety disorders (Pincus 1999). Of this joint caseload, 49,8% have a history of hospitalisation. The World Bank Burden of Disease project reports that mental disorder accounts for 9.1% of the global burden of disease in the world overall, and a staggering 22.4% in established market economies. Anxiety and depressive disorders, known to have a predominantly chronic and remittent course, account for almost one-half (10.9%) of this (Andrews 1998). The indirect costs of depression to society are being estimated at seven times the direct costs for depression management and at one-half of the total costs of all mental illness (Stoudemire 1986). The Camberwell Needs for Care survey suggests that only 28% of the need for treatment of depression, and only 13% relating to anxiety, are met (Bebbington 1997). Among the non-institutionalised civilian population of the United States, most people with psychiatric disorders fail to obtain professional treatment (Kessler 1994). The established mental health care system does not have the resources to meet the extensive need for care of those with anxiety and depressive disorders. Such gaps between what is on offer and what is needed may be filled cost-effectively by paraprofessionals who could offer treatment and care traditionally delivered by mental health professionals (Harchik 1989).

The literature indicates that mental health care may profit from several alternative approaches in the management of anxiety and depressive disorders. (I) Self-help through naturally evolved or specially created 'lay' groups and networks represents the oldest and most widely spread system of care for human ills (Katz 1981).

Self-help groups arise in society when certain needs are not being met by formal health care organisations (Lieberman 1990). Well-known examples are the Alcoholic Anonymous groups and self-help programs for eating disorders. Research on these groups and programs belongs mainly to the field of sociology, and generally concerns case histories based on anecdotal evidence. Only one meta-analysis (Barlow 1999) has examined studies of self-help groups, but no conclusions can be drawn regarding anxiety disorders. (II) Bibliotherapy, as defined by Marrs (Marrs 1995), relies on written texts, computer programs, or audio/video-recorded material for the purpose of understanding or solving problems regarding persons' development or meeting their therapeutic needs. Meta-analyses (Scogin 1990, Gould 1993, Marrs 1995, Cuijpers 1997) have found mean effect sizes (ES) for bibliotherapy from 0.53 to 0.96 for various target problems, ranging from 'minor' problems (assertion skills, study skills, parental skills, difficulties with sleep, sex, and memory) to disorders that may approach clinical severity (depression, anxiety, habit disorders). The effects on anxiety and mood disturbances fell within this range (Gould 1993, Marrs 1995). Differences between self-administered and therapist-administered treatments were non-significant (Marrs 1995, Scogin 1990, Cuijpers 1997). A meta-analysis concerning anxiety and depressive disorders only (den Boer 2004) shows a significant effect as well for bibliotherapy as a self-help treatment for relapsing and chronic anxiety and depressive disorders. (III) Psychoeducation, as part of many treatment strategies, might be considered a kind of bibliotherapy, for example Lewinsohn's 'Coping with Depression' course, containing 12 sessions and 2 booster sessions (Lewinsohn 1986). According to Cuijpers (Cuijpers 1998), Lewinsohn's course is an effective treatment for unipolar depression, and useful as part of an active outreach approach for people recruited by the media who might not otherwise seek treatment. (IV) Christensen and Jacobson (Christensen 1994) concluded that 'paraprofessionals' usually achieve effects that are larger than those obtained under control conditions (including waiting list), and comparable to effects obtained by professional therapists. A controlled study (Bright 1999) suggests that paraprofessionals are as effective as professionals in reducing symptoms of depressed patients using cognitive-behavioural group therapy.

The term 'paraprofessional' generally describes a whole category of mental health personnel who are not qualified as psychiatrists, psychologists, social workers or nurses, and who are below a master's-degree level of education (Moffic 1984). Alternatively, paraprofessionals may be experienced patients, residents from local catchment areas (Grant 1996) or college students (Sherman 1998). They may constitute up to 50 percent of the unofficial mental health care manpower (Moffic 1984). All have had some degree of training, are connected to professional staff and supervised by professionals in the work they are doing to ensure quality of care and communication skills, and to prevent emotional burn out. On a number of points, the quality of the relationship with clients may differ between paraprofessionals and professionals. Often paraprofessionals ground their therapeutic relationship not so much in established theory or empirical research but in day-to-day experience and commonsense (Rohde 1996). Paraprofessionals may be paid workers, but may also be volunteers.

Both self-help modalities, self-help groups (I) and bibliotherapy (II), are presumed to be mainly self-supporting without much professional interference. Lewinsohn's psycho-education courses (III) are led by professionals. All alternatives mentioned for professional treatment are meant to reach persons who otherwise might not obtain adequate treatment. By means of bibliotherapy, clients train themselves. By means of a course, professionals train clients. Paraprofessionals (IV) are mainly trained or supervised by professionals in order to treat or train clients. If paraprofessionals (like lay people or clients themselves) can perform effective psychological treatment (with or without some initial training, but not to a qualification degree) under (or without) supervision by a professional, then this will bring psychological treatment within the range of psycho-education, or even simply education. Bibliotherapy for anxiety and depressive disorders and psycho-education courses for unipolar depression are good examples supporting further development of these modalities in the treatment of anxiety and depressive disorders.

Several RCTs have been published comparing professional and non-professional interventions for anxiety disorder (Barnett 1985; Falloon 1981) and depression (Bright 1999, Bedi 2000, Kelly 1993), but no systematic review exists on these disorders. This review aims to critically examine the commonsense notion that professional training/qualification is necessary to deliver effective psychological treatment for anxiety and depressive disorders. With respect to this subject we will define professionals as being psychiatrists or psychotherapists. Nurses and counsellors are professionals as well, but when performing therapy requiring the skills that are an essential (as opposed to optional) part of the training for a psychiatrist or psychologist, they will be defined as paraprofessionals. We wished to review all RCTs comparing any kind of psychological treatment of anxiety and depression performed by paraprofessionals with professionals or no treatment; and we wanted to know whether the results also would apply to potentially disabling anxiety and depressive disorders. The definition of paraprofessional would be examined on paraprofessionals with versus without a professional background in mental health care.

OBJECTIVES

1. To systematically review all published and unpublished randomised controlled studies that have compared the effectiveness on symptom outcomes of any kind of psychological treatment of anxiety and depressive disorders for adults, performed by paraprofessionals, with psychological treatment by professionals, or with waiting list or placebo condition.

2. If sufficient data were available, to examine whether this also would apply to those RCTs that focus on clinically significant anxiety and depressive disorders (potentially affecting all aspects of social functioning) of referred patients with a psychiatric history and/or whose illness has lasted two years or more.

METHODS

Criteria for considering studies for this review

Types of studies

Inclusion criteria
Randomised controlled trials that used symptom measures, and compared the effects of any kind of psychological treatment given by paraprofessionals with psychological treatments given by professionals, or with waiting list or placebo condition.
Exclusion criteria
Quasi-randomised clinical trials.

Types of participants

Adult participants of 18 years and older with a diagnosis within the range of anxiety and depressive disorders, irrespective of gender, race or nationality.
The diagnosis is based on a structured clinical interview for assessment of a DSM or ICD diagnosis, or on assessment scales using cut off scores to establish caseness.

Types of interventions

Any kind of psychological treatment for anxiety and depressive disorders. 'Paraprofessionals' were defined as mental health care workers, paid or voluntary, unqualified with respect to the psychological treatment for anxiety and depressive disorders, and replacing professionals in the treatment of patients with anxiety or depressive disorders. Nurses and counsellors are professionals as well, but when performing therapy requiring the skills that were an essential (as opposed to optional) part of the training for a psychiatrist or psychologist, they were defined as paraprofessionals. For example, behaviourally trained nurses who should have been fully qualified to give behavioural treatment, did not fall within the range of the definition. Nurses or lay people who did not have such qualifications, but had some training in basic principles of behavioural treatment, fell within the range of the definition, whether or not performing their treatments under supervision. The following comparisons were undertaken:
1. Paraprofessionals versus professionals
2. Paraprofessionals versus control (waiting list/placebo)

Types of outcome measures

Depression and/or anxiety symptom scale scores. Validated observer and self-rated measurement scales were accepted.

Search methods for identification of studies

1. Searching of electronic databases including EMBASE (ExerptaMedica), MEDLINE and PsycINFO, known for their sampling of medical and psychiatric research, all years published. Key words are: para-/paraprofessional, non-/nonprofessional, rand* (randomised trials), respectively psy* limiting the search to psychiatric and psychological treatment.
2. Citation lists of articles reviewing the subject and included studies.
3. Searching the Cochrane Collaboration Depression, Anxiety and Neurosis Controlled Trials Register (CCDANCTR) and The Cochrane Controlled Clinical Trials Register (CCTR) for the incorporation of hand-searching of specialist journals (additional keywords peer and volunt*).
4. The first author of controlled studies and review reports on the subject were approached requesting for additional unreported data.

Data collection and analysis

Selection of trials
One author screened all publications, which were obtained by the search strategy on their relevance to this review, based on the criteria for inclusion.
A pilot test on the inclusion criteria was conducted on a sample of six articles, including two that were thought to be certainly eligible, two certainly not eligible and two whose eligibility was questionable, in order to control for and further refine the definition of 'paraprofessional.'
Studies that apparently met the selection criteria, or were likely to be relevant but had to be excluded, were listed, and the relevant reason for exclusion was given.
Assessment of study quality
Two authors independently assessed the study quality by means of Quality Rating Scale (QRS) developed by the Cochrane Collaboration Depression, Anxiety and Neurosis Review Groups. The QRS has been developed in order to standardise the quality assessment of trials, assessing 23 items of quality according to three degrees of adequacy ("0"; "1"; "2"). "Blinding of subjects" (item 8) cannot be performed for psychological treatments, and "details on side-effects" (item 15) concerns drug trials, therefore both items were not scored. The maximum score that could be retrieved was 42 for 21 items. Until now, no validation of norms of QRS-assessment exists. Mathematically two groups of quality level were constructed, according to a presumed low level ranging from 0-21, and a moderate to high level from 22-42. Because inter-rater

agreement of the QRS has been found to be high for overall scores, but moderate for the individual items (Moncrieff 2001), disagreements on item level were discussed in the research group to define a final quality rating. Sensitivity analysis were performed to address the influence of study quality (low/moderate and high quality), allocation concealment, blinding, post randomisation exclusions, and loss to follow-up.

Data extraction

General information about methods (study duration, type of trial, patient/provider/outcome assessor blinding, anxiety/depression/disabling disorder, drop outs, co-interventions, integrity), participants (inclusion criteria, exclusion criteria, characteristics of setting, number of participants, age, sex, disease stage, race, nationality, baseline characteristic differences between groups), interventions (description of intervention and paraprofessionals, training/supervision, paid/volunteer, client/non-client, professional background, placebo condition, waiting list, frequency of contact, duration of therapy, integrity), outcome characteristics (N, Mean, Standard Deviation / n, N), and allocation concealment were extracted independently by two authors, and entered into Revman 4.2 under Table Characteristics of Included Studies.

Method of analysis

Two comparisons were made to test the review hypotheses: (1) treatment performed by paraprofessionals versus professionals; and (2) treatment performed by paraprofessionals versus waiting list or placebo condition.

Treatment outcome

The main outcome of the review was the post treatment difference between the compared conditions, measured by rating scales.

Statistics

Statistical analysis was performed in accordance with the guidelines for statistical analysis in the Cochrane Reviewers Handbook 4.2.3 (November 2004).

Continuous data

The standard mean difference (SMD) with 95% confidence intervals was used for each comparison to standardise the results of the trials to a uniform scale before pooling. Meta-analysis involves a weighted combination of estimates. Incorporating the assumption that the different studies were estimating different, yet related, treatment effects, assuming heterogeneity in the set of studies, the random effects model was applied.

Dichotomous data.

When scales were analysed as dichotomous data, the appropriate continuous data were requested from the authors. If continuous data were not available, dichotomous analysis were found to be acceptable providing a defensible cut-point to define caseness; odds ratios were used to estimate the pooled effect size. Intention-to-treat (ITT) analyses are preferred as they are unbiased, including all participants randomised into a trial irrespective of what happened subsequently. Data of all patients randomised into the intervention group of available cases were analysed in the review, using as a denominator the total number of people who completed the trial for the particular outcome in question for dichotomous data.

Heterogeneity

A test of heterogeneity examined whether the separate effect sizes could be considered to be samples from a common population of effect sizes. A value greater than 50% may be considered substantial heterogeneity.

Missing data

Very high dropout or difference across treatment groups were considered to be of low quality rating and were removed from pooling. Variation in the degree of missing data was also considered as a potential source of heterogeneity.

Tables

To summarise the data, continuous data were placed in a continuous data table, dichotomous data in a dichotomous data table and all of the data in a third data table using the generic inverse variance method. Odds ratios were re-expressed as standardised mean differences which allow dichotomous and continuous data to be pooled together. Based on the assumption that the underlying distribution of the continuous measurement in each treatment group follows a logistic distribution (which is a symmetrical distribution similar in shape to the normal distribution but with more data in the distributional tails), and that the variability of the outcomes is the same in both treated and control participants, the odds ratios can be re-expressed as a standardised mean difference according to the following formula SMD=$\sqrt{3}/\pi$*logOR. The standard error of the log odds ratio can be converted to the standard error of a standardised mean difference by multiplying by the same constant. Alternatively standardised mean differences can be re-expressed as log odds ratios. Log odds ratios and standard errors for all trials in the meta-analysis were combined using the generic inverse variance method in RevMan version 4.2.3.

Sensitivity analyses

Sensitivity analyses have been performed to address the influence of diagnosis or cut-off score as inclusion criterion, study quality (moderate/high), ambiguity concerning studies to include, imputed data, selection of scales (self-/observer rated measures), intention-to-treat analysis, post randomisation exclusions and loss to follow-up.

Publication bias

A funnel plot was produced to examine whether the smaller studies in the meta-analysis tended to show larger treatment effects, which might be due to publication bias.

Subgroup analyses

Subgroup analyses for diagnosis (anxiety/depression), definition of paraprofessionals (with/without professional background), intervention (individual/group) and gender (post-hoc analysis) were performed.

Data synthesis

All respective post treatment follow-up measurements according to the authors' definition were grouped for the main analyses. If post treatment measurement was not reported, the last measurement

for studies of short duration (< 3 months) and the first measurement for longer duration of studies were used as the post treatment measurement; the last measurement for longer studies was taken as follow-up measurement. The measurements were also grouped for each three-month time period. The data were synthesised using Review Manager 4.2 software. Data that could not be pooled statistically were described in the results and discussion section.
Comparisons and data

Main comparisons
01 Paraprofessionals versus professionals - post treatment
01 Continuous data; 02 Dichotomous data; 03 All data; generic inverse variance method
02 Paraprofessionals versus control (waiting list/placebo) - post treatment
01 Continuous data; 02 Dichotomous data; 03 All data; generic inverse variance method
03 Paraprofessionals versus professionals - follow-up
01 Continuous data; 02 dichotomous data; 03 all data; generic inverse variance method
04 Paraprofessionals versus control (waiting list/placebo) - follow-up
01 continuous data; 02 dichotomous data; 03 all data; generic inverse variance method
Sensitivity analyses
05 Study quality (Quality Rating Scale)
06 Allocation concealment
07 Self-report and observer rated scales
08 Intention-to-treat and per protocol analysis
09 One or two and more comparisons with the same control condition
10 Sample size
11 Diagnosis or cut-off score as inclusion criterion
12 Validity of measures
Subgroup analyses
13 Paraprofessionals (a) with and (b) without professional background
14 (a) Anxiety and (b) Depressive disorders
15 (a) Individual and (b) Group interventions
16 (a) Same intervention and (b) Different interventions performed by paraprofessionals and professionals
17 (a) Short term and (b) Moderate to long term post treatment
18 (a) Short term and (b) Moderate to long term follow-up
19 Gender
20 Disabling disorders: paraprofessionals vs professionals post-treatment
21 Disabling disorders: paraprofessionals vs control (waiting list/placebo) post treatment
22 Disabling disorders: paraprofessionals vs professionals follow-up
23 Disabling disorders: paraprofessionals vs control (waiting list/placebo) follow-up

RESULTS

Description of studies

The electronic search (December 2003) resulted in the identification of 102 studies, of which one was written in German. Citation lists of those studies, together with 53 articles reviewing the subject, revealed another 18 studies for examination, of which one further study was German. Suggestions made by eight out of 32 first authors who were approached, did not result in the addition of new studies for examination. Through examination of titles and abstracts of the 120 studies, 32 were identified as falling within the range of the inclusion criteria. Five studies were eligible for inclusion (Barnett 1985, Bright 1999, Dennis 2003, Harris 1999, Russell 1976). Twenty-seven studies were excluded (see reasons for exclusion in Table of Characteristics of Excluded Studies).
Of the five included studies, two studies (Bright 1999; Russell 1976) compared the same intervention performed by paraprofessionals versus professionals. Two interventions, cognitive behavioural therapy and supportive group therapy, were studied in the treatment of depression (Bright 1999). Another two interventions (Russell 1976), systematic desensitisation relaxation and cue-controlled relaxation, were studied in the treatment of speeching anxiety. One further study compared care as usual applied by professionals with a combination of care as usual and a supportive intervention provided by paraprofessionals, which was based on personal experience with the underlying problem of the target population in the treatment of anxious primiparous mothers (Barnett 1985). Another two studies compared peer support and a control condition: experienced mothers to prevent postpartum depression (Dennis 2003); and befriending among women with chronic depression (Harris 1999).

One study presented a diagnosis based on a structured clinical interview for assessment of a DSM-III-R diagnosis (SCID-NP; Spitzer 1990) (major depressive disorder, dysthymia, depression not otherwise specified; Bright 1999). The remaining studies used a cut-off score to establish caseness for anxiety and depressive problems: Personal Report of Confidence as a Speaker (PRCS; Paul 1966) score greater than 15 (Russell 1976); State and Trate Anxiety Inventory (STAI; Spielberger 1970) of 40 or more (retrieved from pilot study: M=33.1 and SD=8.1;Barnett 1985); the Bedford College threshold for 'caseness' (Finlay-Jones 1980) measured with the shortened Present State Examination (PSE-10; Wing 1990) (Harris 1999); and, Edinburgh Postnatal Depression Scale (EPDS; Cox 1987) score of greater than 9 (Dennis 2003).
Three studies involved women only, with a mean age of 28.7 years (Barnett 1985), 18 years or older, but mainly between 25 and 34 years (Dennis 2003), or mainly between 25 and 40 years (Harris 1999). Two studies yielded a gender mixed population with a mean age of 45.8 years (Bright 1999), and a young population of undergraduates (Russell 1976).

The nationality of patients included was American (Russell 1976, Bright 1999), British (Harris 1999), Canadian (Dennis 2003) and Australian (Barnett 1985). Patients were mainly Caucasian (Bright 1999), or unspecified (Russell 1976, Barnett 1985, Harris 1999, Dennis 2003).

Paraprofessionals were volunteers, non-clients, without professional background comprising: experienced mothers (Barnett 1985); recruited from a community based self-help organisation (Bright 1999); recruited through advertisement (Harris 1999); ex-clients, also recruited by advertisement (Dennis 2003); or advanced undergraduates (Russell 1976), presumed having at least some professional background or experience.

Treatment varied between five sessions over a six week period (Russell 1976), ten weekly 90-minute sessions (Bright 1999); on a regular basis, but not further specified (Barnett 1985); weekly meetings for a minimum of one hour for one year (Harris 1999); and mother-to-mother telephone-based contact as frequently as the individual mother deemed necessary, for eight weeks (Dennis 2003).

Training in the intervention included an initial five training meetings (Russell 1976) or two days' workshop (Bright 1999), with weekly supervision given in both studies; only a set of guidelines and schedule of contact (Barnett 1985), initial training of three days (Harris 1999), or four hours of training, and supervision on request (Dennis 2003) but no control of treatment integrity. See for details of the studies: Table Characteristics of Included Studies.

Two studies did not report baseline characteristic differences between comparison groups (Russell 1976; Bright 1999); two studies found no demographic differences between the groups (Harris 1999; Dennis 2003); and one study concluded that no demographic nor symptom-rated differences existed between the comparison groups (Barnett 1985).

Only one study (Bright 1999) used an observer-rated symptom scale: the revised version of the Hamilton Rating Scale for Depression (HRSD; Rehm 1985) because of the high interrater reliability (coefficient: 0.84 to 0.95 reported on three studies). We preferred uniformity of ratings by using self-report measures for recomputation: Taylor Manifest Anxiety Scale (TMAS; Taylor 1963), validity not reported (Russell 1976); Spielberger State and Trait Anxiety Inventory (STAI; Spielberger 1970), validity not reported (Barnett 1985); Beck Depression Inventory (BDI; Beck 1979), high reliability and documented internal consistency and validity (Beck 1988) (Bright 1999); a shortened version of Present State Examination (PSE-10; Wing 1990), extended by the Bedford College criteria to date onset and offset of episodes of depression and anxiety, as well as to assess the severity of symptoms (Finlay-Jones 1980), the Bedford College threshold for 'caseness' has been found similar to probable major depression according to Research Diagnostic Criteria (RDC) (Dean 1983) (Harris 1999); Edinburgh Postnatal Depression Scale (EPDS; Cox 1987), validated by standardised psychiatric interviews with large samples, has well-documented reliability and validity in multiple languages (Dennis 2003).

Three studies reported one post treatment measurement at eight weeks (Russell 1976), ten weeks (Bright 1999), and one year (Harris 1999); one study reported four measurements at 3, 6, 9, and 12 months (Barnett 1985), and one study 2 measurements at 4 and 8 weeks Dennis 2003), both studies without defining post treatment and follow-up measurements.

For authors' conclusions: changes in self-report indices of speech anxiety showed the cue-controlled relaxation and systematic desensitisation treatments to be significantly more effective than no treatment but not different from each other (Russell 1976). Changes in anxiety levels for mothers not receiving an intervention were minimal in the study by Barnett 1985; in high-anxiety subgroups there was a 19% reduction in state anxiety levels for those receiving a professional intervention; a 12% reduction for those receiving a non-professional intervention; and a 3% reduction in controls. A planned contrast analysis determined that only professional intervention had a significant effect. Bright 1999 concluded that non-professionals were as effective as professionals in reducing depressive symptoms, and that clients in the cognitive behavioural herapy (CBT) and Mutual Support Group (MSG) conditions improved equally; however, more patients in the professionally led CBT group were classified as nondepressed and alleviated of symptoms than in the paraprofessionally led CBT groups, based on BDI scores. A statistically significant effect upon remission was found for befriending (Harris 1999). Dennis 2003 reported that significant group differences were found in probable major depressive symptomatology (EPDS > 12) at the four-week and eight-week assessments in favour of the experimental group; specifically, at the four-week assessment (40.9% of mothers in the control group, compared with 10% in the experimental group), and at the eight-week assessment (52.4% of mothers in the control group, compared with 15% of mothers in the experimental group).

Risk of bias in included studies

According to the Quality Rating Scale (QRS), four studies were of moderate to high quality, ranging from the highest score of 31 (Harris 1999), 30 (Bright 1999) to 27 (Dennis 2003), 23 (Barnett 1985), and one lower quality study scoring 17 (Russell 1976).

Sample size was small (<50 per group) in all studies. Allocation concealment was not reported in two studies (Russell 1976; Bright 1999) and done adequately in two studies (Harris 1999; Barnett 1985; Dennis 2003). Sample demographics were reported in detail by one study (Dennis 2003), basic details were reported by three studies (Barnett 1985; Bright 1999; Harris 1999), and none by one study (Russell 1976).

Objectives and main outcomes were clear in three studies (Bright 1999; Harris 1999; Dennis 2003). Objectives were clear in two studies (Russell 1976; Barnett 1985) but the main outcome was not specified a priori. Planned duration of the trial including fol-

low up was short (< 3 months) in two studies (Russell 1976; Dennis 2003) and adequate (> 6 months) in the remaining studies (Barnett 1985; Bright 1999; Harris 1999). Power calculation was performed adequately in one study (Bright 1999), mentioned without details in one study (Barnett 1985), and not reported in three studies (Russell 1976; Harris 1999; Dennis 2003). Four studies (Barnett 1985; Bright 1999; Harris 1999; Dennis 2003) reported clear inclusion and exclusion criteria; one study reported inclusion and exclusion criteria, but without details about exclusions (Russell 1976).

Blinding of subjects is not possible in treatment intervention trials. One study used an observer-rated symptom measure, but blinding of the assessor was not reported (Bright 1999).

Post randomisation exclusions were not reported in two studies (Russell 1976; Barnett 1985) or did not take place in the remaining studies (Bright 1999; Harris 1999; Dennis 2003). There were no drop-outs (Russell 1976; Bright 1999; Harris 1999;), limited number of drop-outs (Barnett 1985; Dennis 2003), and no cross-overs. Three studies delivered continuous data (Russell 1976; Barnett 1985; Bright 1999), of which one study did not report adequate data for re-analysis (Barnett 1985). Two studies delivered dichotomous data (Harris 1999; Dennis 2003); continuous data were not retrieved on request.

Four studies (Russell 1976; Barnett 1985; Harris 1999; Dennis 2003) recruited representative samples, one study recruited by media advertisements (Bright 1999). Treatment integrity was assessed in three studies (Russell 1976; Bright 1999; Harris 1999). Only two studies reported a declaration of interest (Harris 1999; Dennis 2003).

In summary, four studies were moderate in quality, and one was low in quality. Caution must be made in interpreting the results because of the small number of studies using small samples, different treatment duration, performance bias (blinding treatments), and rater-bias (use of self-rated and lack of blinding in observer-rated measures). Sensitivity analyses and subgroup analyses were required on various aspects of quality study study characteristics.

Effects of interventions

Five studies were included in the review, involving 326 participants. For post treatment comparisons, five paraprofessionals versus professionals (n=160) and five paraprofessionals versus control condition (n=220) were included. For follow-up comparisons, one comparison of paraprofessionals versus professionals (n=61) and one comparison of paraprofessionals versus control condition (n= 61) were included .The numbers below correspond with the list presented previously in the 'comparisons and data' section.

Main objectives

01 Paraprofessionals versus professionals post treatment included five comparisons (Russell 1976 - two comparisons, Barnett 1985, Bright 1999 - two comparisons). The pooled standardised mean difference (SMD) did not indicate a significant difference between the conditions (SMD= 0.09, 95% CI -0.23 to 0.40; p=0.58). No heterogeneity was found between studies (I^2=0.1%; Chi^2= 4.0; df=4; p=0.41).

02 Paraprofessionals versus control (waiting list/placebo) post treatment included five comparisons, three of which were continuous (Russell 1976 - two comparisons; Barnett 1985) and two of which were dichotomous (Harris 1999, Dennis 2003). The means of one study were in the opposite direction, in favour of the control condition (Barnett 1985). The pooled odds ratio (generic inverse variance method) of re-expressed continuous data (SMD 95% CI) and dichotomous data (OR) indicated a significant result in favour of the paraprofessionals condition (OR=0.34, 95% CI 0.13 to 0.88, p=0.03) but heterogeneity was noted between studies (I^2=60.9%, Chi^2= 10.24, df=4; p=0.04). The Barnett 1985 study, favouring the control condition, did not specify post treatment measurement and did not supply appropriate data for the continuous outcome (SDs were missing). The study was at least twice the size of each other individual study, while dominating the results. Removing the Barnett 1985 study from this comparison strengthened the significance of the result with a narrower confidence interval (OR=0.25, 95% CI 0.13 to 0.49, p<0.0001) and homogeneity between studies (I^2=0%, Chi^2= 1.72, df=3, p=0.63).

03 Paraprofessionals versus professionals follow-up included one study (Barnett 1985).

No significant difference was found between conditions at 6, 9 or 12 months.

04 Paraprofessionals versus control (waiting list/placebo) follow-up included one study (Barnett 1985).

No significant difference was found between conditions at 6, 9, ot 12 months.

Sensitivity analyses

05 Study quality (Quality Rating Scale).

Low study quality (1-21: Russell 1976) and moderate to high study quality (22-42: Barnett 1985; Bright 1999; Harris 1999; Dennis 2003) did not interact quantitatively (reversed direction) or qualitatively (size of the effect) with the pooled results of paraprofessionals versus professionals post treatment comparison. With respect to the control conditions, the study of low quality, with two comparisons, increased the size of the effect, with widening of confidence intervals (OR=0.14, 95% CI 0.03 to 0.54; p=0.004). The samples were very small (n=8) and both experimental conditions were compared with the same control condition. However, the moderate to high quality studies (Barnett 1985, Harris 1999, Dennis 2003) reduced the results to nonsignificance (OR=0.14, 95% CI 0.03 to 0.54, p=0.21), again indicating strong heterogeneity between studies. Removing the Barnett 1985 study, the pooled outcome from the remaining studies (Harris 1999, Dennis 2003) was significant in favour of paraprofessionals (OR=0.14, 95% CI 0.03 to 0.54, p=0.004). Low quality dominated the pooled result in favour of paraprofessionals, and the study that was likely to be causing heterogeneity reduced the result to nonsignificance.

06 Allocation concealment.

Neither adequate or inadequate allocation concealment affected the pooled effect quantitatively or qualitatively for the paraprofessionals versus professionals comparisons. For the paraprofessional versus waiting list/placebo control comparison, containing the same subsets of studies, the results were the same as those for study quality.

07 Self-report and observer-rated scales.

One study with two independent comparisons used both self-report and observer-rated scales (Bright 1999). The SMDs of the individual paraprofessionals versus professionals comparisons measured by self-report scales were in opposite directions, with Cognitive Behavioural Therapy in favour of professionals and Mutual Support Group in favour of paraprofessionals. The results measured by observer-rated scales (blinding not reported) were in the same direction, both interventions in favour of paraprofessionals. Pooling outcome data of observer-rated scales reversed the results in favour of paraprofessionals (SMD=0.35, 95%CI -0.14 to 0.84, p=0.17). Neither the results of individual comparisons nor pooled estimates reached significance. The effect of self-report and observer-rated scales remains a point of controversy.

08 Intention-to-treat and per protocol analysis.

There were no data with which to perform the analysis.

09 One or two and more comparisons with the same control condition.

The same subsets were included as in the sensitivity analysis on study quality. The results correspond with those reported on study quality.

10 Sample size.

There were no data with which to perform the analysis.

11 Diagnosis or cut-off score as inclusion criterion.

One study used a diagnostic assessment for inclusion (Bright 1999) for two independent comparisons with professionals. The remaining studies used a cut-off score for "caseness." No interacting effect was found.

12 Validity of measures.

All outcome measures used for pooling were reported or known to be valid.

Subgroup analyses.

13 Paraprofessionals (a) with and (b) without professional background.

One study used paraprofessionals with a possible professional background (advanced undergraduates; Russell 1976). Containing the same subsets as included in study quality, the subgroup effects were the same as reported for the sensitivity analysis of study quality.

14 (a) Anxiety and (b) depressive disorders.

The results were the same as those reported for the sensitivity analysis on diagnosis or cut-off score as an inclusion criterion for the paraprofessionals versus professionals comparisons. With respect to paraprofessionals versus control condition comparisons, the pooled OR of two studies examining anxiety disorders (Harris 1999; Dennis 2003) was significantly in favour of paraprofessionals (OR=030, 95% CI 0.14 to 0.64, p=0.002). Three comparisons of depressive disorders (Russell 1976, Barnett 1985) did not reach significance (OR=0.30, 95% CI 0.06 to 2.04, p=0.24). However, both studies were thought to be controversial because of low study quality (Russell 1976) and causing heterogeneity (Barnett 1985).

15 (a) Individual and (b) group interventions.

No different results for both subgroups comparing paraprofessionals and professionals. The results equalled the sensitivity analysis on study quality for the control condition because of the similar subsets of studies.

16 (a) Same and (b) different interventions performed by paraprofessionals and professionals.

The results equalled those of 15, containing the same study subsets.

17 (a) Short and (b) moderate to long duration post treatment.

There were no data to perform the analysis for the paraprofessionals versus professionals comparison. Concerning the paraprofessionals versus control condition comparison, short duration (= < 3 months) of treatment (Russell 1976, Barnett 1985, Dennis 2003) did not reach a significant level of effect (OR=0.31, 95% CI 0.08 to 1.21, p=0.09), whereas long duration (> 3 months) was significant for one study (Harris 1999) favouring paraprofessionals (OR=0.35, 95% CI 0.15 to 0.83, p=0.02).

18 (a) Short term and (b) moderate to long term follow-up.

There were no data with which to perform the analysis.

19 Gender.

Concerning the paraprofessionals versus professionals comparisons, two studies, both with independent comparisons recruited mixed samples (Russell 1976, Bright 1999) and one study recruited women only (Barnett 1985). No different outcomes were found. With respect to the paraprofessionals versus control condition comparisons, the results equalled those reported in the sensitivity analysis on study quality.

20 - 23 Subgroup disabling anxiety and depressive disorders.

No studies were available to examine whether the results would also apply to clinically significant anxiety and depressive disorders (potentially affecting all aspects of social functioning) of referred patients with a psychiatric history and/or whose illness has lasted two years or more.

Final analyses

The Russell 1976 study, with two comparisons, showed a number of methodological inadequacies (low quality with inadequate concealment of allocation, comparing two interventions with one control condition, very small sample sizes, use of advanced undergraduate paraprofessionals assumed to have some kind of professional background), all items likely biasing the results in favour of paraprofessionals, and should be removed from pooling.

The Barnett 1985 study, which appeared to cause heterogeneity, was of moderate to high study quality, and performed adequate allocation concealment, while the SMD was in an opposing direction, in comparing the results of the primary outcome of the study with the authors' conclusion. The primary study objective was the state anxiety level (STAI) of high anxiety primiparous mothers at

12 months' duration of follow-up. Post treatment and follow-up were not further specified. We might have been wrong to choose the 3-month assessment as the post treatment measurement according to the review protocol. A second study (Harris 1999) aimed at symptom reduction at 12 months' duration of follow-up for a chronic depressive population, presenting just one post randomisation measurement at 12 months, of which one was used for pooling post treatment data according to the protocol. We decided to take the primary outcome as was described in the original study. We re-analysed the main comparisons of the review, removing the Russell 1976 study from pooling, and choosing 12 months' assessment data from Barnett 1985. Pooling data from two studies (Barnett 1985, Bright 1999; both continuous outcomes) with three independent paraprofessionals versus professionals comparisons (N=128) indicated no significant effect (SMD=0.13; 95% CI -0.39 to 0.64, p=0.63), but also suggested heterogeneity between studies (I^2=49.9%, Chi^2=3.99, df=2, p=0.14), which is difficult to interpret for a very small sample of studies. Pooling data from three studies (Barnett 1985, Harris 1999, Dennis 2003), containing three comparisons (N=188), indicated a very significant result in favour of paraprofessionals (OR=0.30, 95% CI 0.18 to 0.48, p<0.00001) and homogeneity between studies (I^2=0%, Chi^2=0.47, df=2, p=0.79).

DISCUSSION

Summary of the results

This review summarises the results of five studies involving 326 participants, mainly women, including five paraprofessionals versus professionals post treatment comparisons (n=160) and five paraprofessionals versus control condition post treatment comparisons (n=220); and one follow-up comparison of paraprofessionals versus professionals (n=61) and control condition (n=61) respectively. The methodological quality of the studies was, with the exception of one study (Russell 1976), moderate to high with adequate allocation concealment. Paraprofessionals were volunteers without professional background in four studies, and one study used advanced undergraduates in the experimental condition (Russell 1976). Measurements varied between eight weeks and one year.

Both continuous and dichotomous data were used for pooling, where the appropriate data were not received on request (Harris 1999; Dennis 2003). SDs were retrieved from another study for imputation of missing data for one study (Barnett 1985). Using a random effects model, the pooled standard mean difference was calculated for continuous data (paraprofessionals versus professionals comparisons), and for combined data, the pooled odds ratio using the generic inverse variance method (paraprofessionals versus control condition comparisons). Self-report measures were used for pooling data. Interaction on the effect of self- and observer-rated measures was analysed. Furthermore, sensitivity analyses and subanalyses were performed for study and treatment characteristics and for gender.

The individual studies suggested no significant differences between paraprofessionals and professionals, but indicated better results for paraprofessionals compared to the control condition, which was found to be significant in three studies (Russell 1976; Harris 1999; Dennis 2003).

Main results

The pooled results indicated no significant difference between paraprofessionals and professionals at post treatment (Russell 1976, Barnett 1985, Bright 1999) and follow-up (Barnett 1985). A significant difference was found favouring paraprofessionals compared to the control condition, though heterogeneity was found between studies (Russell 1976; Barnett 1985; Harris 1999; Dennis 2003). Removing one study from pooling because of indistinct definition of post treatment measurement (Barnett 1985) resulted in a strongly significant effect and homogeneity. One study reported follow-up data, with no significant differences found between paraprofessionals and professionals, or between paraprofessionals and the control condition (Barnett 1985).

Sensitivity analyses

Low study quality or inadequate allocation concealment (Russell 1976) strengthened the result in favour of paraprofessionals. Both self-report and observer-rated scales were potentially biasing the results, with the self-report scale pointing in the direction of professionals, and with the observer-rated scale pointing to paraprofessionals for one intervention comparison (Bright 1999). No data were available to examine differences between intention-to-treat (all studies) versus per protocol analyses, sample size (all studies: small, <50 per group) and measures (all validated).

Subgroup analyses

Because of the small number of studies, most subgroup analyses could not be performed. The pooled estimate for less than three months' post treatment (post randomisation) measurements did not show a significant difference between paraprofessionals and professionals, whereas for a duration of more than three months, a significant difference was found favouring paraprofessionals compared to the control condition (Harris 1999). No differences were found for mixed samples (Russell 1976; Bright 1999) or women only (Barnett 1985) comparing professionals and paraprofessionals. No studies were available to examine whether the results would also apply to clinically significant anxiety and depressive disorders (potentially affecting all aspects of social functioning) of referred patients with a psychiatric history and/or whose illness has lasted two years or more.

Final analyses

Evaluating the study which appeared to cause heterogeneity (Barnett 1985), the measurement chosen for pooling post treatment outcome (three months' post randomisation) seemed to be inappropriate, while the primary outcome of the study was reduction of anxiety levels at 12 months' post randomisation, according to another study included in the review (Harris 1999). After correction for heterogeneity (taking the 12 months' post randomisation measurement; Barnett 1985) and removing the study of low quality (Russell 1976), pooling of three comparisons (n= 128; mixed gender and women only) indicated no significant effect between paraprofessionals and professionals, and a strongly significant pooled effect for three comparisons (n=188; women only) favouring paraprofessionals over the control condition and homogeneity between studies.

Limitations of the review

Limitations of the review were the small number of studies included, despite the intensive search; the small sample size per study; and a population of mainly women. Potential effect modifiers were dose of support or care provided by paraprofessionals, the choice of comparison treatment, and the distinctive length of treatment and follow-up. Blinding of patient and therapist in active intervention research is impossible (Bower 2001). Participants who are aware of their assignment status report more symptoms, and are probably biased as well (Karlowski 1975). In comparisons of the same interventions provided by professionals and paraprofessionals, blinding could have been performed. Analyses were mainly based on self-report measures. Mood and anxiety were presumed to affect cognitive functioning and therefore might have biased self-assessment. A sensitivity analysis of the biasing effect of self- versus observer-rated measures in a meta-analysis of the effectiveness of self-help methods in the treatment of clinically important anxiety and depressive disorders (den Boer 2004) resulted in a significant difference (T=2.84; p<0.005) between the mean effect size in six comparisons (n=197) for self-assessment (effect size =0.69) versus rater-assessment (effect size =1.40). The use of observer-rated assessments was likely to improve the results favouring self-help. We pointed out that observer rated scales were supposed to be more accurate and objective. The fact that observer rated scales showed a bigger impact than self-rated scales in this review could favour the finding that observer rated scales also suffer from biasing the results, and are like self-rated scales, with the addition of one more layer of bias, at least when observer-rated assessment is not blinded. Studies on the effect of paraprofessionals compared to professionals might be especially sensitive to the occurrence of publication bias, because of the controversial objective caused by the predominant paradigm of professional care.

Comparisons with other studies

In the last decade, evidence of the effectiveness of self-help manuals and courses which could partially replace professionals in treating anxiety and depressive disorders has grown. Meta-analyses on manuals and courses have concluded that they produce significant results in the treatment of distinctive but mainly minor problems (Scogin 1990, Gould 1993, Marrs 1995, Cuijpers 1997, Cuijpers 1998). A meta-analysis, for anxiety and depressive disorders only, also showed a significant effect for bibliotherapy as a self-help treatment for relapsing and chronic anxiety and depressive disorders (den Boer 2004). In studies included in the review paraprofessionals were trained and used manuals. Three moderate to high quality studies have recently been conducted (Bright 1999, Harris 1999, Dennis 2003), all concerning clinically relevant anxiety or depressive problems. It is hoped that the trend for higher quality RCTs to examine the effectiveness of alternatives to the use of professionals will continue.

AUTHORS' CONCLUSIONS

Implications for practice

The findings of this review are inconclusive on the effect of paraprofessionals partially replacing professionals in the treatment of anxiety and depressive disorders. While there were no significant differences found between paraprofessionals and professionals, the number of included studies was quite small, and the number with follow-up data was even smaller. Studies comparing paraprofessionals and professionals had methodological problems, therefore the possible and acceptable absence of differences leaves an open question about whether the studies were adequately designed and implemented to detect differences. Nevertheless, pooling data from three studies, all involving women only, indicated a strongly significant effect for paraprofessionals (all volunteers) compared to no treatment. Significant questions remain about the conditions under which paraprofessionals can be effective. Most studies mention some selection, training and supervision of paraprofessionals. If paraprofessionals, volunteers or patients, can be effective therapists (with no training or minor initial training), or can offer support because of their personal experience with the underlying problem, this will bring psychological treatment within the scope of psycho-education or education alone. The evidence presented so far may justify the development of new programs incorporating paraprofessionals.

Implications for research

Treatment programs for mood and anxiety disorders incorporating paraprofessionals need further evaluation on their effectiveness and cost-effectiveness. The effect of self-report and observer-rater measures on the results needs more study. Blinding patients for the paraprofessional versus professional status of the treatment provider and controlling for blinding is likely to reduce performance bias, and needs to be done, but can hardly be performed with psychological or supportive interventions.

ACKNOWLEDGEMENTS

Jan Neeleman, University Medical Centre Utrecht, for the initial collaboration.

Herman Kluiter, Department of Psychiatry, Univerity Medical Centre Groningen, for consultation on statistical matters.

Hugh McGuire, CCDAN trials search co--ordinator, for performing the electronic search.

Rob Scholten, director of the Dutch Cochrane Centre, for statistical advice.

CCDAN Editorial base, for their everlasting support.

REFERENCES

References to studies included in this review

Barnett 1985 *{published data only}*
Barnett B, Parker G. Professional and non-professional intervention for highly anxious primiparous mothers. *British Journal of Psychiatry.* 1985;**146**:287–93.

Bright 1999 *{published data only}*
* Bright JI, Baker KD, Neimeyer RA. Professional and paraprofessional group treatments for depression: a comparison of cognitive-behavioral and mutual support interventions. *Journal of Consulting and Clinical Psychology* 1999;**67**(4):491–501.

Bright 1999b *{published data only}*
Bright JI, Baker KD, Neimeyer RA. Professional and paraprofessional group treatments for depression: a comparison of cognitive-behavioral and mutual support interventions. *Journal of Consulting and Clinical Psychology* 1999;**67**(4):491–501.

Dennis 2003 *{published data only}*
Dennis CL. The effect of peer support on postpartum depression: a pilot randomized controlled trial. *Canadian Journal of Psychiatry - Revue Canadienne de Psychiatrie* 2003; **48**(2):115–24.

Harris 1999 *{published data only}*
Harris T, Brown GW, Robinson R. Befriending as an intervention for chronic depression among women in an inner city. 1: Randomised controlled trial. *British Journal of Psychiatry* 1999;**174**:219–24.

Russell 1976 *{published data only}*
Russell RK, Wise F. Treatment of speech anxiety by cue-controlled relaxation and desensitization with professional and paraprofessional counselers. *Journal of Counseling Psychology* 1976;**23**(6):583–6.

Russell 1976b *{published data only}*
Russell RK, Wise F. Treatment of speech anxiety by cue-controlled relaxation and desensitization with professional and paraprofessional counselers. *Journal of Counseling Psychology* 1976;**23**(6):583–6.

References to studies excluded from this review

Alder 2002 *{published data only}*
Alder E, Truman J. Counselling for postnatal depression in the voluntary sector. *Psychology and Psychotherapy: Theory, Research and Practice* 2002;**75**(2):207–220.

Barnett 1991 *{published data only}*
Barnett B, Schaafsma MF, Guzman AM, Parker GB. Maternal anxiety: a 5-year review of an intervention study. *Journal of Child Psychology & Psychiatry & Allied Disciplines* 1991;**32**(3):423–438.

Bedi 2000 *{published data only}*
Bedi N, Chilvers C, Churchill R, Dewey M, Duggan C, Fielding K, et al. Assessing effectiveness of treatment of depression in primary care. Partially randomised preference trial. *Br J Psychiatry* 2000;**177**:312–318.

Burlingame 1996 *{published data only}*
Burlingame GM, Barlow SH. Outcome and process differences between professional and nonprofessional therapists in time-limited group psychotherapy. *Int J Group Psychother* 1996;**46**(4):455–478.

Carey 1987 *{published data only}*
Carey MP, Burish TG. Providing relaxation training to cancer chemotherapy patients: A comparison of three delivery techniques. *J Consult Clin Psychol* 1987;**55**(5): 732–737.

Clifford 1991 *{published data only}*
Clifford PA, Tan S-Y, Gorsuch RL. Efficacy of a self-directed behavioral health change program: weight, body composition, cardiovascular fitness, blood pressure, health risk, and psychosocial mediating variables. *Journal of Behavioral Medicine* 1991;**14**(3):303–323.

Ebersole 1969 *{published data only}*
Ebersole GO, Leiderman PH, Yalom ID. Training the nonprofessional group therapist: a controlled study. *Journal of Nervous and Mental Disease* 1969;**149**(3):294–302.

Falloon 1981 *{published data only}*
Falloon IR, Lloyd GG, Harpin RE. The treatment of social phobia. Real-life rehearsal with nonprofessional therapists. *The Journal of Nervous and Mental Disease* 1981;**169**(3): 180–184.

Johnson 1993 *{published data only}*
Johnson Z, Howell F, Molloy B. Community mothers' programme: randomised controlled trial of non-professional intervention in parenting. *BMJ* 1993;**306** (6890):1449–1452.

Karlsruher 1976 *{published data only}*
Karlsruher AE. The influence of supervision and facilitative conditions on the psychotherapeutic effectiveness of nonprofessional and professional therapists. *American Journal of Community Psychology* 1976;**4**(2):145–154.

Kelly 1993 *{published data only}*
Kelly JA, Murphy DA, Bahr GR, Kalichman SC, Morgan MC, Stevenson LY, et al. Outcome of cognitive-behavioral and support group brief therapies for depressed, HIV-infected persons. *American Journal of Psychiatry* 1993;**150**: 1679–1686.

Krauthauser 1997 *{published data only}*
Krauthauser H, Bassler M. Das problem der randomisierung bei psychotherapiestudien. *Psychother Psychosom med Psychol* 1997;**47**:279–284.

Lenihan 1990 *{published data only}*
Lenihan G, Kirk WG. Using student paraprofessionals in the treatment of eating disorders. *Journal of Counseling and Development* 1990;**68**(3):332–335.

Lick 1977 *{published data only}*
Lick JR, Heffler D. Relaxation training and attention placebo in the treatment of severe insomnia. *Journal of Consulting and Clinical Psychology* 1977;**45**:153–161.

Mann 1969 *{published data only}*
Mann J, Rosenthal TL. Vicarious and direct counterconditioning of test anxiety through individual and group desensitization. *Behav Res Ther* 1969;**7**:359–367.

Miles 1976 *{published data only}*
Miles JE, McLean PD, Maurice WL. The medical student therapist: treatment outcome. *Canadian Psychiatric Association Journal* 1976;**21**:467–472.

Miller 1983 *{published data only}*
Miller WR, DiPilato M. Treatment of nightmares via relaxation and desensitization: a controlled evaluation. *J Consult Clin Psychol* 1983;**51**(6):870–877.

Mor 1983 *{published data only}*
Mor V, Granger CV, Sherwood CC. Discharged rehabilitation patients: impact of follow-up surveillance by friendly visitor. *Archives of Physical Medicine and Rehabilitation* 1983;**64**(8):346–353.

Pruitt 1989 *{published data only}*
Pruitt SD, Miller WR, Smith JE. Outpatient behavioral treatment of severe obsessive-compulsive disorder: using paraprofessional resources. *Journal of Anxiety Disorders* 1989;**3**:179–186.

Rehm 1981 *{published data only}*
Rehm L, Kornblith SJ, O'Hara MW, Lamparski DM, Romana JM, Volkin JI. An evaluation of major components in a self-control therapy program for depression. *Behavior Modification* 1981;**5**(4):459–489.

Rosner 1999 *{published data only}*
Rosner RFU, Beutler LE, Daldrup R. Depressionsverläufe in unterschiedlichen Psychotherapieformen. Modellierung durch Hierarchische lineare Modelle (HLM). / Course of depression in different psychotherapies. An application of hierarchical linear models. *Zeitschrift fuer Klinische Psychologie Forschung und Praxis* 1999;**28**(2):112–120.

Schinke 1979 *{published data only}*
Schinke SP, Smith TE, Myers RK, Altman DC. Crisis-intervetnion training with paraprofessionals. *Journal of Community Psychology* 1979;**7**(4):343–347.

Scott 1992 *{published data only}*
Scott AI, Freeman CP. Edinburgh primary care depression study: treatment outcome, patient satisfaction, and cost after 16 weeks. *BMJ* 1992;**304**(6831):883–887.

Shelton 1978 *{published data only}*
Shelton JL, Madrazo-Peterson R. Treatment outcome and maintenance in systematic desensitization: professional versus paraprofessional effectiviness. *Journal of Counseling Psychology* 1978;**25**(4):331–335.

Simons 2001 *{published data only}*
Simons L, Mynors-Wallis L, Pickering R, Gray A, Brooking J, Thompson C, et al. A randomized controlled trial of problem solving for anxiety, depression and life difficulties by community psychiatric nurses among general practice patients: Background and method. *Primary Care Psychiatry* 2001;**7**(4):129–136.

Taylor 1999 *{published data only}*
Taylor D. Effectiveness of professional--peer group treatment: symptom management for women with PMS. *Res Nurs Health* 1999;**22**(6):496–511.

Thomas 1987 *{published data only}*
Thomas JR, Petry RA, Goldman JR. Comparison of cognitive and behavioral self-control treatments of depression. *Psychol Rep* 1987;**60**(3 Pt 1):975–982.

Additional references

Andrews 1998
Andrews G. The burden of anxiety and depressive disorders. *Current Opinion in Psychiatry* 1998;**11**:121–3.

Balch 1976
Balch P, Solomon R. The training of paraprofessionals as behavior modifiers: a review. *American Journal of Community Psychology* 1976;**4**(2):167–79.

Barlow 1999
Barlow SH, Burlingame GM, Nebeker RS, Anderson E. Meta-analysis of medical self-help groups. *International Journal of Group Psychotherapy* 1999;**50**(1):53–69.

Bebbington 1997
Bebbington PE, Marsden L, Brewin CR. The need for psychiatric treatment in the general population: the Camberwell Needs for Care Survey. *Psychological Medicine* 1997;**27**(4):821–34.

Beck 1979
Beck AT, Rush AJ, Shaw BF, Emery G. *Cognitive therapy of depression*. New York, NY: Guildford Press, 1979.

Beck 1988
Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: Twenty five years of evaluation. *Clinical Psychology Review* 1988;**8**:77–100.

Bedi 2000
Bedi N, Chilvers C, Churchill R, Dewey M, Duggan C, Fielding K, et al. Assessing effectiveness of treatment of depression in primary care. Partially randomised preference trial. *British Journal of Psychiatry* 2000;**177**:312–8.

Bower 2001
Bower P, Richards D, Lovell K. The clinical and cost-effectiveness of self-help treatments for anxiety and depressive disorders in primary care: a systematic review. *British Journal of General Practice* 2001;**51**:838–45.

Christensen 1994
Christensen A, Jacobson NS. Who (or what) can do psychotherapy: The status and challenge of nonprofessional therapies. *Psychological Science* 1994;**5**(1):8–14.

Cox 1987
Cox J, Holden J, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 1987;**150**:782–6.

Cuijpers 1997
Cuijpers P. Bibliotherapy in unipolar depression: a meta-analysis. *Journal of Behavior Therapy and Experimental Psychiatry* 1997;**28**(2):139–47.

Cuijpers 1998
Cuijpers P. A psychoeducational approach to the treatment of depression: a meta-analysis of Lewinsohn's "coping with depression" course. *Behavior Therapy* 1998;**29**:521–33.

Dean 1983
Dean C, Surtees PG, Sashidharan SD. Comparison of research diagnostic systems in an Edinburgh community sample. *British Journal of Psychiatry* 1983;**142**:247–56.

den Boer 2004
den Boer PC, Wiersma D, van den Bosch RJ. Why is self-help neglected in the treatment of emotional disorders? A meta-analysis. *Psychological Medicine* 2004;**34**:959–72.

Dennis 2003
Dennis CL. The effect of peer support on postpartum depression: a pilot randomized controlled trial. *Canadian Journal of Psychiatry - Revue Canadienne de Psychiatrie* 2003; **48**(2):115–24.

Falloon 1981
Falloon IR, Lloyd GG, Harpin RE. The treatment of social phobia. Real-life rehearsal with nonprofessional therapists. *The Journal of Nervous and Mental Disease* 1981;**169**(3): 180–4.

Finlay-Jones 1980
Finlay-Jones R, Brown GW, Duncan-Jones P. Depression and anxiety in the community. *Psychological Medicine* 1980; **10**:445–54.

Gould 1993
Gould RA, Clum GA. A meta-analysis of self-help treatment approaches. *Clinical Psychological Review* 1993;**13**:169–86.

Grant 1996
Grant TM, Ernst CC, Streissguth AP, Phipps P, Gendler B. When case management isn't enough: a model of paraprofessional advocacy for drug- and alcohol-abusing mothers. *Journal of Human Behavior in the Social Environment* 1996;**1**(4):27–56.

Harchik 1989
Harchik AE, Sherman JA, Hopkins BL, Strouse MC, Sheldon JB. Use of behavioral techniques by paraprofessional staff: A review and proposal. *Behavioral Residential Treatment* 1989;**4**(4):331–57.

Harris 1999
Harris T, Brown GW, Robinson R. Befriending as an intervention for chronic depression among women in an inner city. 1: Randomised controlled trial. *British Journal of Psychiatry* 1999;**174**:219–24.

Karlowski 1975
Karlowski TR, Chalmers TC, Frenkel LD, Kapikian AZ, Lewis TL, Lynch JM. Ascorbid acid for the comon cold: a prophylactic and therapeutic trial. *JAMA* 1975;**231**: 1038–42.

Katz 1981
Katz AH. Self-help and mutual aid: An emerging social movement?. *Annual Review of Sociology* 1981;**7**:129–55.

Kessler 1994
Kessler RC, McGonagle KA, Zao S, Nelson CB, Hughes M, Eshleman S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatry disorders in the United States. *Archives of General Psychiatry* 1994;**51**:8–19.

Lewinsohn 1986
Lewinsohn PM, Munoz RF, Youngren MA, Zeiss AM. *Control your depression*. New York, NY: Prentice Hall, 1986.

Lieberman 1990
Lieberman MA. A group therapist perspective on self-help groups. *International Journal of Group Psychotherapy* 1990; **40**(3):251–79.

Marrs 1995
Marrs RW. A meta-analysis of bibliotherapy studies. *American Journal of Community Psychology* 1995;**23**(6): 843–70.

Moffic 1984
Moffic HS, Patterson GK, Laval R, Adams GL. Paraprofessionals and psychiatric teams: An updated review. *Hospital and Community Psychiatry* 1984;**35**(1):61–7.

Moncrieff 2001
Moncrieff J, Churchill R, Drummond C, McGuire H. Development of a quality assessment instrument for trials of treatments for depression and neurosis. *International Journal of Methods in Psychiatric Research* 2001;**10**:126–33.

Paul 1966
Paul GL. *Insight versus desensitization in psychotherapy: An experiment in anxiety reduction.*. Palo Alto, CA: Stanford University Press, 1966.

Pincus 1999
Pincus HA, Zarin DA, Tanielian TL, Johnson JL, West JC, Pettit AR, et al. Psychiatric patients and treatments in 1997: findings from the American Psychiatric Practice Research Network. *Archives of General Psychiatry* 1999;**56**(5):441–9.

Radloff 1977
Radloff LS. The CES-D scale: a new self-report depression scale for research in the general population. *Applied Psychological Measurement* 1977;**1**(3):385–401.

Rehm 1985
Rehm LP, O'Hara MW. Item characteristics of the Hamilton Rating Scale for Depression. *Journal of Psychiatric Research* 1985;**19**:31–41.

Rohde 1996
Rohde D, Nehls N. Caring for individuals with severe and persistent mental illness: the contributions and challenges of residential case aides. *Issues in Mental Health Nursing* 1996;**17**(4):325–36.

Scogin 1990
Scogin F, Bynum J, Stephens G. Efficacy of self-administered treatment programs: meta-analytic review. *Professional Psychology: Research and Practice* 1990;**21**(1):42–7.

Scott 1992
Scott AI, Freeman CP. Edinburgh primary care depression study: treatment outcome, patient satisfaction, and cost after 16 weeks. *BMJ* 1992;**304**:883–7.

Sherman 1998
Sherman BR, Sanders LM, Yearde J. Role-modeling healthy behavior: Peer counseling for pregnant and postpartum women in recovery. *Women's Health Issues* 1998;**8**(4):230–8.

Spielberger 1970
Spielberger CD, Gorsuch RL, Lushene RE. *STAI manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press, 1970.

Spitzer 1990
Spitzer RL, Williams JBW, Gibbon M, First MB. *Structured Clinical Interview for DSM-III-R Non-Patient Edition (SCID-NP)*. Washington, DC: American Psychiatric Press, 1990.

Stoudemire 1986
Stoudemire A, Frank R, Hedemark N, Kamlet M, Blazer D. The economic burden of depression. *General Hospital Psychiatry* 1986;**8**(6):387–94.

Taylor 1963
Taylor JAA. A personality scale of manifest anxiety. *Journal of Abnormal and Social Psychology* 1963;**48**:385–401.

Walker 1988
Walker AM, Martin-Moreno JM, Artalejo FR. Odd man out: a graphical approach to meta-analysis. *American Journal of Public Health* 1988;**78**:961–6.

Wing 1990
Wing JK, Barbor T, Brugha TS. SCAN. Schedules for clinical assessment in neuropsychiatry. *Archives of General Psychiatry* 1990;**47**:589–93.

* *Indicates the major publication for the study*

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Barnett 1985

Methods	RCT, 150 subjects were individually allocated to five groups, inclusive a paraprofessional versus professional comparison and a control condition. Interviewer of initial interview and assessment was blinded. Allocation: by opening a sealed envelop. Assessments at three, six, nine and twelve months. Compliance to intervention and assessments was 97%. Missing data were handled by recording the mean score of the subject's group on that occasion of testing for any missing anxiety score. Part of the study was comparison of the outcome for highly, moderate and minimal anxious primiparous. Quality Rating System Score: 23
Participants	89 highly anxious primiparous, third or fourth day postpartum, from two large obstetric units in Sydney, screened on anxiety level; Mean age: 28.7 ys. Inclusion criteria: Spielberger >=40; married or living with their partner; the baby having no major defect and/or not having spent more than 24 hours in the intensive care nursery; the birth being a single one. No base-line differences of trial subjects between allocated groups. Severity of pathology: The mean scores on trait (45.1) and stat (41.2) Spielberger anxiety scales were close to psychiatric patients with anxiety reactions (trait 48.1; state 49.0). Mean scores for the minimal anxiety group were 23.0 (trait) and 24.9 (state). Australian nationality; race unspecified. No significant baseline demographic and assessed differences between comparison groups
Interventions	Professional intervention: assistance from a social worker experienced in working with mothers and children. Each social worker being allocated six subjects. Guidelines suggested attention to: the provision of support; specific anti-anxiety measures; the promotion of self-esteem and confidence; a reduction of intensity of the mother-father and father-child interaction. Non-professional intervention: common sense advice, support, and practical help of an experienced mother, volunteer, who met study's requirements (no details) for a supportive figure. A set of guidelines was given. One or two subjects were allocated to each mother. A contact diary was maintained for each subject. Control group: not receiving any intervention. Both professionals and non-professionals were suggested a schedule of contact
Outcomes	3, 6, 9, 12 months; post treatment and follow-up not defined. Primary outcome was state anxiety level (STAI) at 12 months. Spielberger State Anxiety (STAI); Costello-comrey anxiety and trait depression scales (STAS); The Beck Depression Inventory (BDI). Continuous data
Notes	No adequate data were available for recomputation. No co-interventions or other potential confounders

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

Bright 1999

Methods	RCT, two different interventions comparisons, both with two treatment conditions, treatment provided by professional versus paraprofessional therapists. 16 months duration of study, with a 10 weeks posttreatment assessment. This study is a preliminary report of the posttreatment results. Individually allocation is blocked by gender and unknown Beck Depression Inventory score. Patient, provider and outcome assessor blinding were not mentioned. Thirty clients terminated therapy before completing seven sessions (30.6%); no difference by treatment condition; women (37%) and men (14%). 42 completed the posttreatment assessment. Quality Rating System score: 30
Participants	28 male, 70 female, recruited through media advertisement, offered a group therapy program for depression at a full-service, sliding-fee clinic based in the University of Memphis Department of Psychology; Mean age: 45.8 ys (distribution: 21-72). Individuals attending weekly sessions received coupons that were exchanged for partial fee reimbursement at the end of the treatment program. Inclusion criteria: Hamilton Rating Scale for Depression >= 10; Structured Clinical Interview for DSM-III-R Non-Patient Edition diagnosis of major depressive disorder, dysthymia, or depression not otherwise specified. Exclusion criteria: bipolar disorder, alcoholism, drug abuse or dependence, organic brain syndrome, history of schizophrenia, depression with psychotic features, or mental retardation; receiving concurrent treatment experiencing current active suicidal potential or other need for immediate treatment. 48 participants reported problems with depression lasting for the past 5 years or longer. Previous treatment for depression was reported by 46 individuals. American nationality, mainly Caucasian. Baseline characteristics differences between comparison groups not reported
Interventions	10 week treatment duration; weekly 90-min sessions for both treatment conditions. Intervention 1. Cognitive Behavioral Therapy following Series 1 of Burns's Feeling Good Seminar Series. Intervention 2. Mutual Supportive Group Therapy involved informal exchanges of information between individuals faced with the same difficulties. Professionals: master's degree in clinical training in clinical or counseling psychology; Paraprofessionals: no formal training, recruited from community-based self-help organizations; Training: 2-day workshop; Weekly supervision
Outcomes	10 weeks posttreatment. Outcomes analysed in the review: Hamilton Rating Scale for Depression (HRSD) (interrater reliability coefficients reported on three studies ranged from 0. 84 to 0.95) assessed by an independent clinician; Beck Depression Inventory (BDI). Outcomes not analysed in the review: Automatic Thoughts Questionnaire; Hopkins Symptom Checklist-58; Therapy Compliance Checklist; Thought Record Skills Assessment. Continuous data
Notes	1. Cognitive Behavioral Therapy (CBT) No co-interventions or other potential confounders.

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment (selection bias)	Unclear risk	D - Not used

Bright 1999b

Methods		
Participants		
Interventions		
Outcomes		
Notes	2. Mutual Supportive Group Therapy (MSG)	
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment (selection bias)	Unclear risk	D - Not used

Dennis 2003

Methods	RCT, 44 subjects were individually allocated to an experimental and control group, using sealed, opaque enveloppes. Assessments at 4 and 8 weeks post randomisation. Intention-to-treat analysis. One drop-out in the control group. Quality Rating System score: 27	
Participants	44 mothers identified as high-risk for postpartum depression (PPD) according to EPDS, identified through region-wide screening at the 8-week immunization clinics. Inclusion criteria: mothers between 8 and 12 weeks postpartum, age > 18 years, had a singleton birth at 37 weeks' gestation or more, scored > 9 on the EPDS. Exclusion criteria: use of antidepressant medications; history of psychotherapy during the previous 12-month period; psychiatric clinical disorder; or postpartum psychosis. Age: mainly between 25-34. Canadian nationality; race unspecified	
Interventions	Both groups had access to the standard community postpartum services. Paraprofessionals: telephone-based peer support (mother-to-mother), initiated 48 to 72 hours of randomisation, as frequently as the individual mother deemed necessary, from a mother who previously experienced PPD and attended a 4-hour training session; treatment integrity controlled. A handbook outlined professional services available for referral and was to be used as a reference guide. No baseline demographic differences between comparison groups	
Outcomes	primary outcome at 8 weeks EPDS score > 12; measurements 4 and 8 weeks, post treatment and follow-up not defined. Edinburgh Postnatal Depression Scale (EPDS). Dichotomous data	
Notes	Community postpartum services are potentially biasing; no other potential confounders	
Risk of bias		
Bias	**Authors' judgement**	**Support for judgement**

Dennis 2003 (*Continued*)

Allocation concealment (selection bias)	Low risk	A - Adequate

Harris 1999

Methods	RCT, 86 subjects, recruited from local area by screened by postal questionnaire, were individually allocated to a paraprofessional and waiting list control group, using a sealed envelop system. Intention-to-treat design. Out of 315 eligible subjects 111 showed interest. No withdrawals. One final assessment after 1 year. Quality Rating System score: 31
Participants	86 depressive women; mainly between 25-40 years; nearly two-thirds in a partnership; more than half had no children at home; one fifth were single mothers; about one-third worked full-time, but about two-fifths did not work at all. No important demographic differences between the two experimental groups (not specified). Inclusion criria: chronic form of depression (> 1 year), fulfilling the Bedford College threshold for 'caseness' of depression. Exclusion criteria were minor or non-chronic from of depression; additional psychiatric disorder; anyone expressing lack of interest in the provisional offer of befriending. British nationality; race unspecified. No baseline demographic differences between comparison groups
Interventions	Volunteer befriending was the experimental condition. Befriending: meeting and talking with the depressed woman for a minimum of one hour each week, and acting as a 'friend' to her, listening and 'being there' for her. Volunteers were recruited through advertisements; no pre-specified selection criteria; current depressive symptoms were not an exclusion criterion. Three-day training also encouraged volunteers to accompany their befriendees outside on trips, to broaden their range of activities, to offer practical support with ongoing difficulties. Although similarity of background experience was considered, there was no attempt to restrict matches in terms of ethnic or cultural background. Waiting list group: not receiving specified treatment. Co-interventions (professional contact or psychotropic drugs) but no association with outcome; no other potential confounders
Outcomes	Remission of two months or more after one year; Present State Examination (PSE). Dichotomous data
Notes	Funds obtained from Family Welfare Association. Co-interventions (professional contact or psychotropic drugs) but no association with outcome; no other potential confounder

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment (selection bias)	Low risk	A - Adequate

Russell 1976

Methods	RCT, stratified blocks assignment, individually allocation, two intervention comparisons, each professional versus paraprofessionals, plus a no-treatment control condition; 6 weeks duration. No patient, provider and outcome assessor blinding. Dropping out of the program did so following the first or second treatment session, citing time conflicts as the primary reason; 42 completed the posttreatment assessment. Endpoint analysis. Quality Rating system score: 17
Participants	23 males, 27 females, volunteer undergraduates, with speeching anxiety, selected from a population of 750 undergraduates enrolled in introductory communication classes. Inclusion criteria: personal Report of confidence as a speaker (PRCS) > 15. No baseline differences between the groups on scales by analysis of variance. Probably young adults. American nationality; race unspecified. Baseline characteristics differences between comparison groups not reported
Interventions	5 treatment sessions over 6 weeks; groups of 2-4 members. 1. systematic desensitisation relaxation, led by both professionals an paraprofessionals; 2. Cue-controlled relaxation, led by both professionals and paraprofessionals. Professionals: counselors PhD in psychology, experienced with interventions. Paraprofessionals: advanced undergraduate who had no previous training in interventions; training: 5 meetings and weekly supervision. No treatment control condition. No co-interventions or other potential confounders
Outcomes	Post treatment assessment of 6 weeks. Taylor Manifest Anxiety Scale (TMAS)
Notes	1. Cue-controlled relaxation (CCR) No co-interventions or other potential confounders.

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment (selection bias)	Unclear risk	D - Not used

Russell 1976b

Methods	
Participants	
Interventions	
Outcomes	
Notes	2. Systematic desensitisation (SD)

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**

Russell 1976b (*Continued*)

Allocation concealment (selection bias)	Unclear risk	D - Not used

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Alder 2002	A prospective study of support for postnatal depression given by the voluntary sector. No controlled design
Barnett 1991	A 5-year follow-up study of the included study of Barnett (1985) concerning anxious primiparous mothers. Symptom level (anxiety) was not the target of the follow-up
Bedi 2000	A partially randomised preference trial assessing effectiveness of depression in primary care. No paraprofessional versus professional comparison design
Burlingame 1996	Effectiveness study of treatment of depression in primary care. Lacking a diagnosis or cut off score of symptom assessment scale, being a inclusion criterion
Carey 1987	A comparison of three delivery techniques for relaxation training to cancer chemotherapy patients by paraprofessionals versus professionals and standard treatment. No diagnosis or cutoff score as inclusion criteria, no anxiety or depression assessments
Clifford 1991	A comparison of professional and peer conditions but depression or anxiety is not the target of treatment
Ebersole 1969	A controlled evaluation of a training program. No patient outcome
Falloon 1981	Drug therapy was compared with placebo throughout the course of a treatment of social phobia by nonprofessional therapists
Johnson 1993	Randomised controlled trial of non-professional intervention in parenting. Anxiety or depression were not target of the study
Karlsruher 1976	The aim of the study was the influence of supervision on the psychotherapeutic effectiveness of non-professionals and professional therapists. Change of symptom level was not the target of measure
Kelly 1993	Comparison of cognitive-behavioural and support group therapies for depressed, HIV-infected persons, combining professionals and paraprofessionals (residents) in both conditions
Krauthauser 1997	Primary aim of the study was the problem of randomisation in psychotherapeutic research, evaluating randomisation of two treatment conditions both provided by professionals
Lenihan 1990	No controlled design for evaluation of a treatment program using student paraprofessionals for treatment of eating disorders. Anxiety of depressive symptoms were not the target of the measure

(*Continued*)

Lick 1977	Relaxation training and attention placebo in the treatment of severe insomnia. No paraprofessional versus professional comparison design
Mann 1969	Inclusion target was test anxiety, not an anxiety or depressive disorder
Miles 1976	Evaluation of treatment outcome by medical student therapist. No controlled trial and no symptom outcome measurement
Miller 1983	Therapists in this study were graduate and undergraduate psychology students for the treatment of nightmares. No controlled study design had been performed to compare the effectiveness in therapy
Mor 1983	A randomised controlled trial to evaluate the impact of follow-up surveillance by friendly visitor on discharged rehabilitation patients, compared with rehabilitation nurse and control condtion. Symptom level was not the target of measure
Pruitt 1989	Case history of using paraprofessional resources for outpatient behavioral treatment of severe obsessieve-compulsive disorder
Rehm 1981	Evaluation of components of a self-therapy program. No professional versus paraprofessional comparison
Rosner 1999	Comparison of bibliotherapy and two different professional treatments
Schinke 1979	Satisfaction study of crisis-intervention training workship with paraprofessionals
Scott 1992	Comparison of treatment by psychologists versus social workers, both professional, performing different interventions, which would give too much room for speculation about the definition of paraprofessionals and the contrast between the quality of treatment given by both professional and paraprofessional
Shelton 1978	Outcome study of systematic desensitisation provided by professionals or paraprofessionals; lacking a diagnosis or cut off score as inclusion criterion
Simons 2001	A randomised controlled trial of problem solving for anxiety, depression and life difficulties provided by community psychiatric nurses. Comparison of treatment conditions led by paraprofessionals versus professionals was not the aim of the study
Taylor 1999	The aim of the study was a comparison of a system of nonpharmacological strategies in symptom management of premenstrual syndrome (PMS) dystress, administered within a group combining peer support and professional guidance versus a waiting list condition
Thomas 1987	A self-control treatment of depression was evaluated against a cognitive treatment of depression. No paraprofessionals versus professionals comparison

DATA AND ANALYSES

Comparison 1. Paraprofessionals vs professionals - post treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data (reduction in symptom severity)	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
2 Dichotomous data (remission versus no remission)	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 2. Paraprofessionals vs control (waiting list/placebo) - post treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data (reduction in symptom severity)	3	93	Std. Mean Difference (IV, Random, 95% CI)	-0.59 [-1.57, 0.39]
2 Dichotomous data (remission versus no remission)	2	127	Odds Ratio (M-H, Random, 95% CI)	0.30 [0.14, 0.64]
3 All data; generic inverse variance	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
4 Heterogeneity analysis (Barnett 1985 removed)	4	159	OR (Random, 95% CI)	0.25 [0.13, 0.49]

Comparison 3. Paraprofessionals vs professionals - follow-up

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data (reduction in symptom severity)	1		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 6 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.10 [-0.60, 0.41]
1.2 9 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	0.33 [-0.18, 0.83]
1.3 12 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	0.26 [-0.24, 0.77]
2 Dichotomous data (remission versus no remission)	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 4. Paraprofessionals vs control (waiting list/placebo) - follow-up

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data (reduction in symptom severity)	1		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 6 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.25 [-0.76, 0.25]
1.2 9 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.12 [-0.62, 0.39]
1.3 12 months	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.29 [-0.79, 0.22]
2 Dichotomous data (remission versus no remission)	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 5. Sensitivity analysis: study quality (QRS)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals (post treatment): moderate-high quality (QRS =22-42)	3	128	Std. Mean Difference (IV, Random, 95% CI)	-0.07 [-0.58, 0.44]
2 Paraprofessionals vs professionals (post treatment): low quality (QRS = 0-21)	2	32	Std. Mean Difference (IV, Random, 95% CI)	-0.04 [-0.74, 0.65]
3 Paraprofessionals vs control (post treatment): moderate to high quality (QRS=22-42)	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]
4 Paraprofessionals vs control (post treatment): low quality (QRS = 0-21)	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]

Comparison 6. Sensitivity analysis: allocation concealment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 adequate	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.22 [-0.73, 0.28]
1.2 inadequate	4	99	Std. Mean Difference (IV, Random, 95% CI)	0.00 [-0.44, 0.44]
2 Paraprofessionals vs control (waiting list/placebo) -post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 adequate	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]

2.2 inadequate	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]
3 Paraprofessionals vs professionals - follow-up	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
3.1 adequate	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
3.2 inadequate	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
4 Paraprofessionals vs control (waiting list/placebo) - follow-up	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
4.1 adequate	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
4.2 inadequate	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 7. Sensitivity analysis: self-report and observer-rated scales

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	2		Std. Mean Difference (IV, Random, 95% CI)	Subtotals only
1.1 self-report scales	2	67	Std. Mean Difference (IV, Random, 95% CI)	0.04 [-0.89, 0.98]
1.2 observer-rated scales	2	67	Std. Mean Difference (IV, Random, 95% CI)	-0.35 [-0.84, 0.14]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.1 self-report scales	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.2 observer-rated scales	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
3 Paraprofessionals vs professionals - follow-up	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
4 Paraprofessionals vs control (waiting list/placebo) - follow-up	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 8. Sensitivity analysis: intention-to-treat and per protocol analysis

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 intention-to-treat analysis	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.2 per protocol analysis	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 intention-to-treat analysis	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.2 per protocol analysis	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 9. Sensitivity analysis: one comparison and two or more comparisons with same control condition

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
1.1 one comparison per control condition	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]
1.2 two or more comparisons per control condition	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]

Comparison 10. Sensitivity analysis: small and moderate/large sample size

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 small size (<50 per group)	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.2 moderate to large size (= > 50 per group)	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 small size (< 50 per group)	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.2 moderate to large size (= > 50 per group)	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 11. Sensitivity analysis: diagnosis or cut-off score as inclusion criterion

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 diagnosis	2	67	Std. Mean Difference (IV, Random, 95% CI)	0.04 [-0.89, 0.98]
1.2 cut-off score	3	93	Std. Mean Difference (IV, Random, 95% CI)	-0.16 [-0.57, 0.25]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 diagnosis	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.2 cut-off score	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]

Comparison 12. Sensitivity analysis: validity of measures

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
1.1 validation reported	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
1.2 no validation reported	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.1 validation reported	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.2 no validation reported	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 13. Subgroup analysis: paraprofessionals (a) with and (b) without professional background

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 paraprofessionals with professional background	2	32	Std. Mean Difference (IV, Random, 95% CI)	-0.04 [-0.74, 0.65]
1.2 paraprofessionals without professional background	3	128	Std. Mean Difference (IV, Random, 95% CI)	-0.07 [-0.58, 0.44]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 paraprofessionals with professional background	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]
2.2 paraprofessionals without professional background	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]

Comparison 14. Subgroup analysis: (a) anxiety and (b) depressive disorders

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 anxiety	3	93	Std. Mean Difference (IV, Random, 95% CI)	-0.16 [-0.57, 0.25]
1.2 depression	2	67	Std. Mean Difference (IV, Random, 95% CI)	0.04 [-0.89, 0.98]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]

2.1 anxiety	3	93	OR (Random, 95% CI)	0.34 [0.06, 2.04]
2.2 depression	2	127	OR (Random, 95% CI)	0.30 [0.14, 0.64]

Comparison 15. Subgroup analysis: (a) individual and (b) group interventions

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 individual interventions	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.22 [-0.73, 0.28]
1.2 group interventions	4	99	Std. Mean Difference (IV, Random, 95% CI)	0.00 [-0.44, 0.44]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 individual interventions	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]
2.2 group interventions	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]

Comparison 16. Subgroup analysis: (a) same and (b) different interventions performed by paraprofessionals and professionals

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 same intervention by both paraprofessionals and professionals	4	99	Std. Mean Difference (IV, Random, 95% CI)	0.00 [-0.44, 0.44]
1.2 different interventions by paraprofessionals and professionals	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.22 [-0.73, 0.28]

Comparison 17. Subgroup analysis: (a) short term and (b) moderate to long term post treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 short term (= < 3 months)	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.2 moderate to long term (> 3 months)	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]

2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 short term (= < 3 months)	4	134	OR (Random, 95% CI)	0.31 [0.08, 1.21]
2.2 moderate to long term (> 3 months)	1	86	OR (Random, 95% CI)	0.35 [0.15, 0.83]

Comparison 18. Subgroup analysis: (a) short term and (b) moderate to long term follow-up

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
1.1 short term (= < 3 months)	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
1.2 moderate to long term (> 3 months)	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.1 short term (= < 3 months)	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]
2.2 moderate to long term (> 3 months)	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 19. Subgroup analysis: gender

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals - post treatment	5	160	Std. Mean Difference (IV, Random, 95% CI)	-0.09 [-0.40, 0.23]
1.1 mixed	4	99	Std. Mean Difference (IV, Random, 95% CI)	0.00 [-0.44, 0.44]
1.2 women	1	61	Std. Mean Difference (IV, Random, 95% CI)	-0.22 [-0.73, 0.28]
1.3 men	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Paraprofessionals vs control (waiting list/placebo) - post treatment	5	220	OR (Random, 95% CI)	0.34 [0.13, 0.88]
2.1 mixed	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]
2.2 women	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]
2.3 men	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 20. Subgroup analysis: disabling disorders (paraprofessionals vs professionals - post treatment)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Dichotomous data	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 21. Subgroup analysis: disabling disorders (paraprofessionals vs control - post treatment)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Dichotomous data	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 22. Subgroup analysis: disabling disorders (paraprofessionals vs professionals - follow-up)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Dichotomous data	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 23. Subgroup analysis: disabling disorders (paraprofessionals vs control - follow-up)

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Continuous data	0	0	Std. Mean Difference (IV, Random, 95% CI)	0.0 [0.0, 0.0]
2 Dichotomous data	0	0	Odds Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3 All data; generic inverse variance	0	0	OR (Random, 95% CI)	0.0 [0.0, 0.0]

Comparison 24. Controlling for heterogeneity: paraprofessionals vs control - post treatment

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 All data; generic inverse variance	4	159	OR (Random, 95% CI)	0.25 [0.13, 0.49]

Comparison 25. Controlling for heterogeneity: sensitivity analysis - study quality

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs control - post treatment: moderate to high quality (QRS =22-42) (n=3)	3	188	OR (Random, 95% CI)	0.49 [0.16, 1.49]
2 Paraprofessionals vs control - post treatment: moderate to high quality (QRS=22-42) (n=2)	2	127	OR (Random, 95% CI)	0.30 [0.14, 0.64]
3 Paraprofessionals vs control - post treatment: low quality (QRS = 0-21)	2	32	OR (Random, 95% CI)	0.14 [0.03, 0.54]

Comparison 26. Final analyses

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Paraprofessionals vs professionals: post treatment - re-analysis	3	128	Std. Mean Difference (IV, Random, 95% CI)	0.13 [-0.39, 0.64]
2 Paraprofessionals vs control (waiting list/placebo): post treatment - re-analysis	3	188	OR (Random, 95% CI)	0.30 [0.18, 0.48]

Analysis 1.1. Comparison 1 Paraprofessionals vs professionals - post treatment, Outcome 1 Continuous data (reduction in symptom severity).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 1 Paraprofessionals vs professionals - post treatment

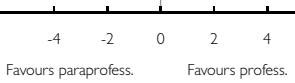
Outcome: 1 Continuous data (reduction in symptom severity)

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$

Test for overall effect: Z = 0.55 (P = 0.58)

Test for subgroup differences: Not applicable



Analysis 2.1. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 1 Continuous data (reduction in symptom severity).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

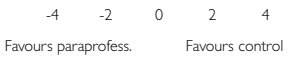
Outcome: 1 Continuous data (reduction in symptom severity)

Study or subgroup	Paraprofessionals N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Russell 1976	8	20.1 (7.3)	8	28.3 (9.5)		30.1 %	-0.92 [-1.96, 0.13]
Russell 1976b	8	17.8 (5)	8	28.3 (9.5)		28.9 %	-1.31 [-2.42, -0.20]
Barnett 1985	30	37 (9.35)	31	35.5 (9.35)		41.0 %	0.16 [-0.34, 0.66]
Total (95% CI)	**46**		**47**			**100.0 %**	**-0.59 [-1.57, 0.39]**

Heterogeneity: $Tau^2 = 0.54$; $Chi^2 = 7.56$, df = 2 (P = 0.02); $I^2 = 74\%$

Test for overall effect: Z = 1.18 (P = 0.24)

Test for subgroup differences: Not applicable



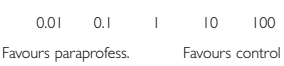
Analysis 2.2. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 2 Dichotomous data (remission versus no remission).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

Outcome: 2 Dichotomous data (remission versus no remission)

Study or subgroup	Paraprofessionals n/N	Control n/N	Odds Ratio M-H,Random,95% CI	Weight	Odds Ratio M-H,Random,95% CI
Harris 1999	15/43	26/43		74.5 %	0.35 [0.15, 0.84]
Dennis 2003	3/20	10/21		25.5 %	0.19 [0.04, 0.87]
Total (95% CI)	**63**	**64**		**100.0 %**	**0.30 [0.14, 0.64]**
Total events: 18 (Paraprofessionals), 36 (Control)					
Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.45$, df = 1 (P = 0.50); $I^2 = 0.0\%$					
Test for overall effect: Z = 3.11 (P = 0.0019)					
Test for subgroup differences: Not applicable					



Analysis 2.3. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 3 All data; generic inverse variance.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

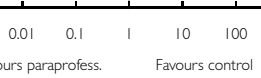
Outcome: 3 All data; generic inverse variance

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Russell 1976	8	8	-1.6689 (0.9671)		14.5 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		13.5 %	0.09 [0.01, 0.70]
Barnett 1985	30	31	0.2902 (0.4627)		26.6 %	1.34 [0.54, 3.31]
Harris 1999	43	43	-1.0498 (0.4394)		27.2 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.2 %	0.19 [0.04, 0.89]
Total (95% CI)	**109**	**111**			**100.0 %**	**0.34 [0.13, 0.88]**

Heterogeneity: $Tau^2 = 0.65$; $Chi^2 = 10.24$, df = 4 (P = 0.04); $I^2 = 61\%$

Test for overall effect: Z = 2.23 (P = 0.025)

Test for subgroup differences: Not applicable



Analysis 2.4. Comparison 2 Paraprofessionals vs control (waiting list/placebo) - post treatment, Outcome 4 Heterogeneity analysis (Barnett 1985 removed).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

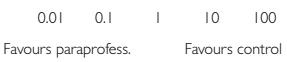
Outcome: 4 Heterogeneity analysis (Barnett 1985 removed)

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Russell 1976	8	8	-1.6689 (0.9671)		12.1 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		10.7 %	0.09 [0.01, 0.70]
Harris 1999	43	43	-1.0498 (0.4394)		58.7 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.4 %	0.19 [0.04, 0.89]
Total (95% CI)	**79**	**80**			**100.0 %**	**0.25 [0.13, 0.49]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 1.72$, df = 3 (P = 0.63); $I^2 = 0.0\%$

Test for overall effect: Z = 4.10 (P = 0.000042)

Test for subgroup differences: Not applicable

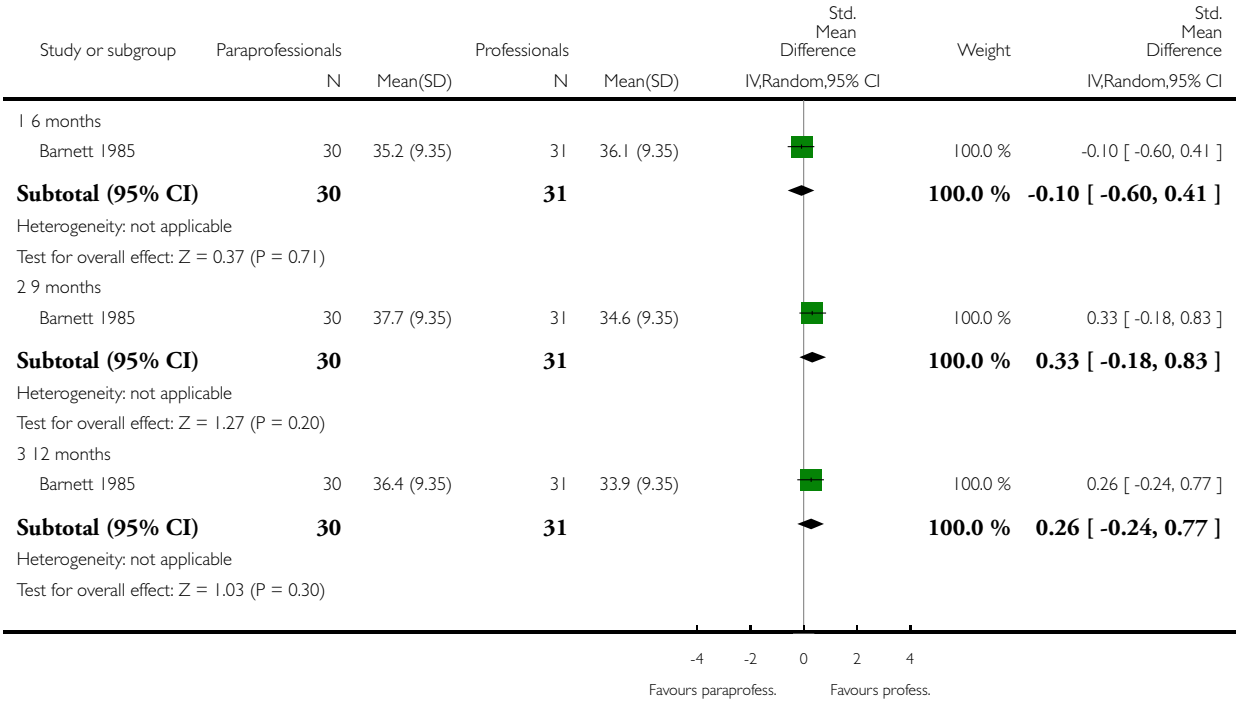


Analysis 3.1. Comparison 3 Paraprofessionals vs professionals - follow-up, Outcome 1 Continuous data (reduction in symptom severity).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 3 Paraprofessionals vs professionals - follow-up

Outcome: 1 Continuous data (reduction in symptom severity)



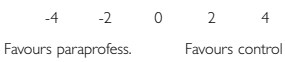
Analysis 4.1. Comparison 4 Paraprofessionals vs control (waiting list/placebo) - follow-up, Outcome 1 Continuous data (reduction in symptom severity).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 4 Paraprofessionals vs control (waiting list/placebo) - follow-up

Outcome: 1 Continuous data (reduction in symptom severity)

Study or subgroup	Paraprofessionals N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 6 months							
Barnett 1985	30	35.2 (9.35)	31	37.6 (9.35)		100.0 %	-0.25 [-0.76, 0.25]
Subtotal (95% CI)	**30**		**31**			**100.0 %**	**-0.25 [-0.76, 0.25]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.99 (P = 0.32)							
2 9 months							
Barnett 1985	30	37.7 (9.35)	31	38.8 (9.35)		100.0 %	-0.12 [-0.62, 0.39]
Subtotal (95% CI)	**30**		**31**			**100.0 %**	**-0.12 [-0.62, 0.39]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.45 (P = 0.65)							
3 12 months							
Barnett 1985	30	36.4 (9.35)	31	39.1 (9.35)		100.0 %	-0.29 [-0.79, 0.22]
Subtotal (95% CI)	**30**		**31**			**100.0 %**	**-0.29 [-0.79, 0.22]**
Heterogeneity: not applicable							
Test for overall effect: Z = 1.11 (P = 0.27)							



Analysis 5.1. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 1 Paraprofessionals vs professionals (post treatment): moderate-high quality (QRS =22-42).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 5 Sensitivity analysis: study quality (QRS)

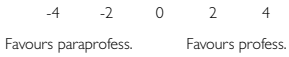
Outcome: 1 Paraprofessionals vs professionals (post treatment): moderate-high quality (QRS =22-42)

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		40.6 %	-0.22 [-0.73, 0.28]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		28.5 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		30.8 %	-0.42 [-1.10, 0.25]
Total (95% CI)	**57**		**71**			**100.0 %**	**-0.07 [-0.58, 0.44]**

Heterogeneity: $Tau^2 = 0.10$; $Chi^2 = 3.98$, df = 2 (P = 0.14); $I^2 = 50\%$

Test for overall effect: Z = 0.27 (P = 0.79)

Test for subgroup differences: Not applicable



Analysis 5.2. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 2 Paraprofessionals vs professionals (post treatment): low quality (QRS = 0-21).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 5 Sensitivity analysis: study quality (QRS)

Outcome: 2 Paraprofessionals vs professionals (post treatment): low quality (QRS = 0-21)

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		50.0 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		50.0 %	-0.03 [-1.01, 0.95]
Total (95% CI)	**16**		**16**			**100.0 %**	**-0.04 [-0.74, 0.65]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.00$, df = 1 (P = 0.96); $I^2 = 0.0\%$

Test for overall effect: Z = 0.12 (P = 0.90)

Test for subgroup differences: Not applicable

Analysis 5.3. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 3 Paraprofessionals vs control (post treatment): moderate to high quality (QRS=22-42).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 5 Sensitivity analysis: study quality (QRS)

Outcome: 3 Paraprofessionals vs control (post treatment): moderate to high quality (QRS=22-42)

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Barnett 1985	30	31	0.2902 (0.4627)		36.9 %	1.34 [0.54, 3.31]
Harris 1999	43	43	-1.0498 (0.4394)		37.9 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		25.2 %	0.19 [0.04, 0.89]
Total (95% CI)	**93**	**95**			**100.0 %**	**0.49 [0.16, 1.49]**

Heterogeneity: $Tau^2 = 0.65$; $Chi^2 = 6.57$, df = 2 (P = 0.04); $I^2 = 70\%$

Test for overall effect: Z = 1.25 (P = 0.21)

Test for subgroup differences: Not applicable

Analysis 5.4. Comparison 5 Sensitivity analysis: study quality (QRS), Outcome 4 Paraprofessionals vs control (post treatment): low quality (QRS = 0-21).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 5 Sensitivity analysis: study quality (QRS)

Outcome: 4 Paraprofessionals vs control (post treatment): low quality (QRS = 0-21)

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Russell 1976	8	8	-1.6689 (0.9671)		53.0 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		47.0 %	0.09 [0.01, 0.70]
Total (95% CI)	**16**	**16**			**100.0 %**	**0.14 [0.03, 0.54]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.25$, df = 1 (P = 0.62); $I^2 = 0.0\%$

Test for overall effect: Z = 2.84 (P = 0.0045)

Test for subgroup differences: Not applicable

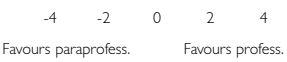
Analysis 6.1. Comparison 6 Sensitivity analysis: allocation concealment, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 6 Sensitivity analysis: allocation concealment

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 adequate							
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Subtotal (95% CI)	**30**		**31**			**39.1 %**	**-0.22 [-0.73, 0.28]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.86 (P = 0.39)							
2 inadequate							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**43**		**56**			**60.9 %**	**0.00 [-0.44, 0.44]**
Heterogeneity: Tau^2 = 0.03; Chi^2 = 3.56, df = 3 (P = 0.31); I^2 =16%							
Test for overall effect: Z = 0.00 (P = 1.0)							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: Tau^2 = 0.00; Chi^2 = 4.00, df = 4 (P = 0.41); I^2 =0%							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: Chi^2 = 0.42, df = 1 (P = 0.52), I^2 =0.0%							

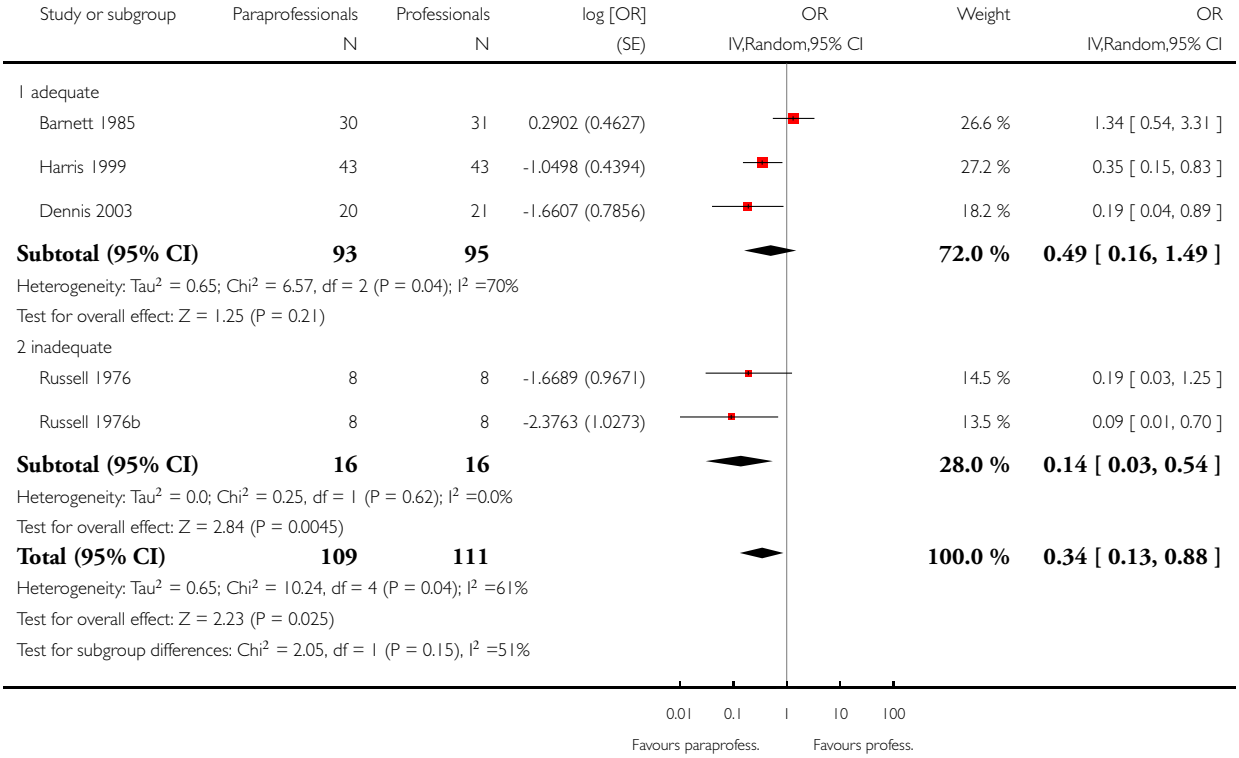


Analysis 6.2. Comparison 6 Sensitivity analysis: allocation concealment, Outcome 2 Paraprofessionals vs control (waiting list/placebo) -post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 6 Sensitivity analysis: allocation concealment

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) -post treatment

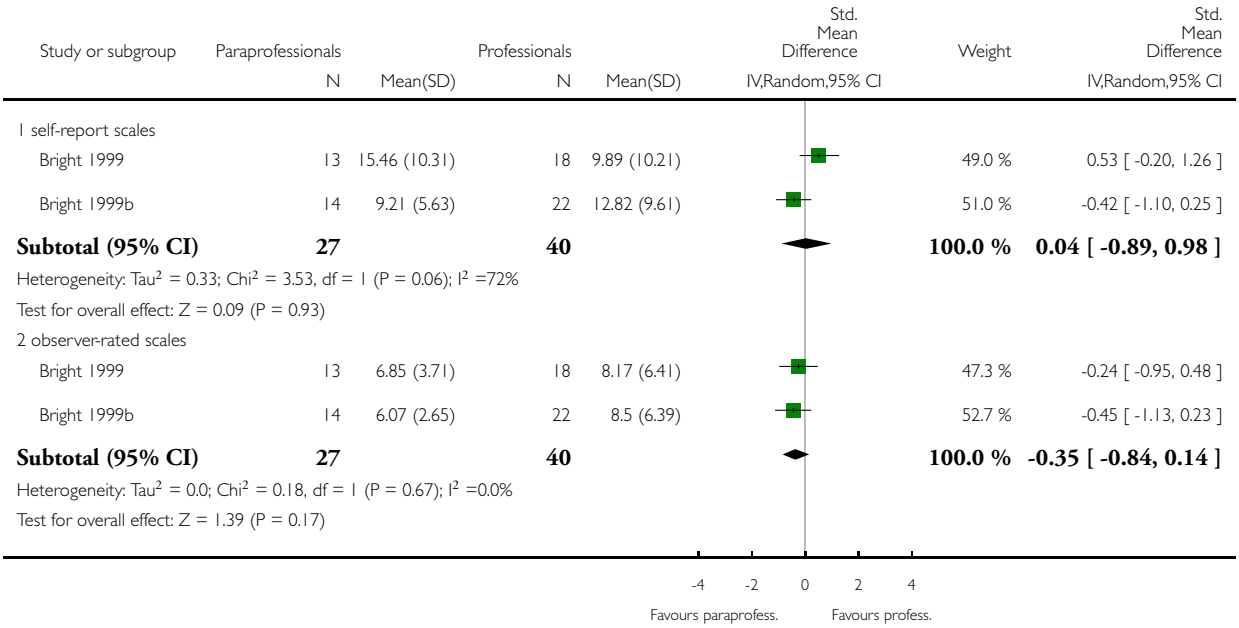


Analysis 7.1. Comparison 7 Sensitivity analysis: self-report and observer-rated scales, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 7 Sensitivity analysis: self-report and observer-rated scales

Outcome: 1 Paraprofessionals vs professionals - post treatment



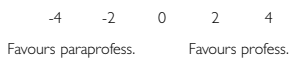
Analysis 8.1. Comparison 8 Sensitivity analysis: intention-to-treat and per protocol analysis, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 8 Sensitivity analysis: intention-to-treat and per protocol analysis

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 intention-to-treat analysis							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
2 per protocol analysis							
Subtotal (95% CI)	**0**		**0**				**Not estimable**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: Not applicable							

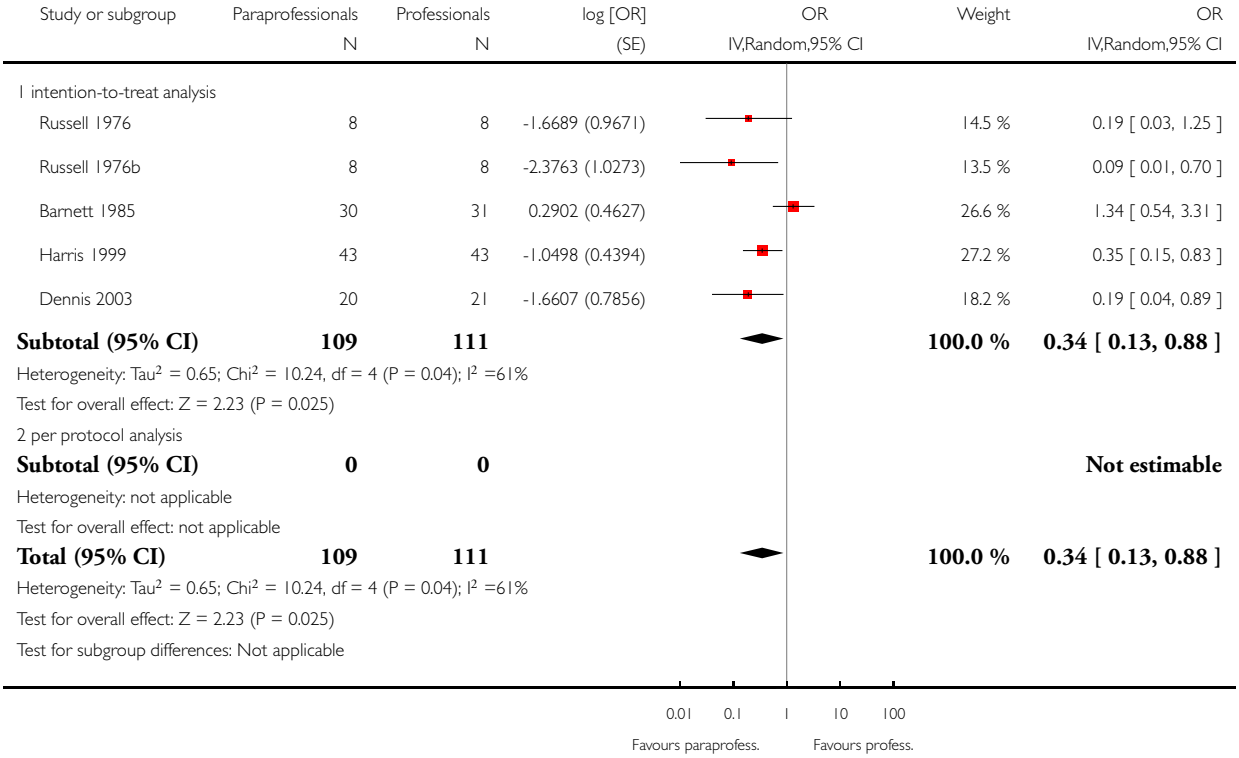


Analysis 8.2. Comparison 8 Sensitivity analysis: intention-to-treat and per protocol analysis, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 8 Sensitivity analysis: intention-to-treat and per protocol analysis

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

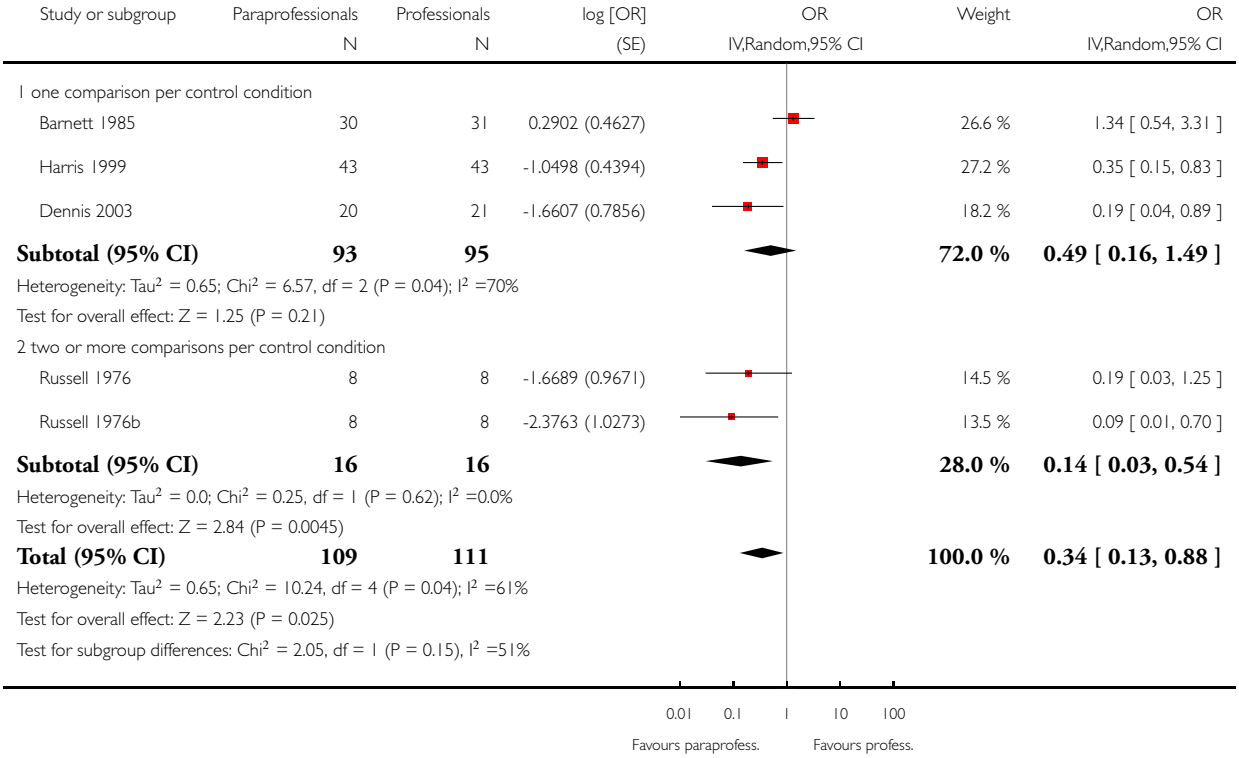


Analysis 9.1. Comparison 9 Sensitivity analysis: one comparison and two or more comparisons with same control condition, Outcome 1 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 9 Sensitivity analysis: one comparison and two or more comparisons with same control condition

Outcome: 1 Paraprofessionals vs control (waiting list/placebo) - post treatment



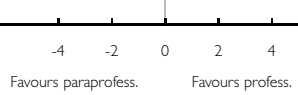
Analysis 10.1. Comparison 10 Sensitivity analysis: small and moderate/large sample size, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 10 Sensitivity analysis: small and moderate/large sample size

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 small size (<50 per group)							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
2 moderate to large size (= > 50 per group)							
Subtotal (95% CI)	**0**		**0**				**Not estimable**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: Not applicable							

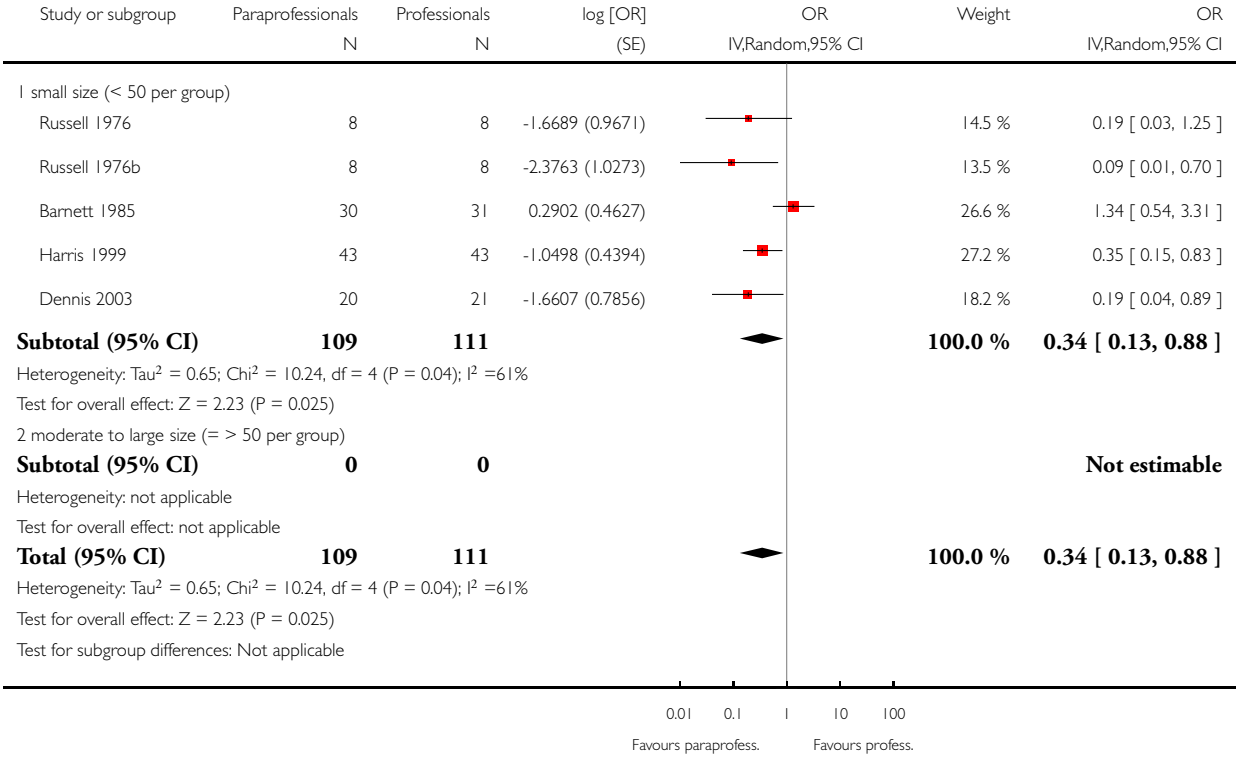


Analysis 10.2. Comparison 10 Sensitivity analysis: small and moderate/large sample size, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 10 Sensitivity analysis: small and moderate/large sample size

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

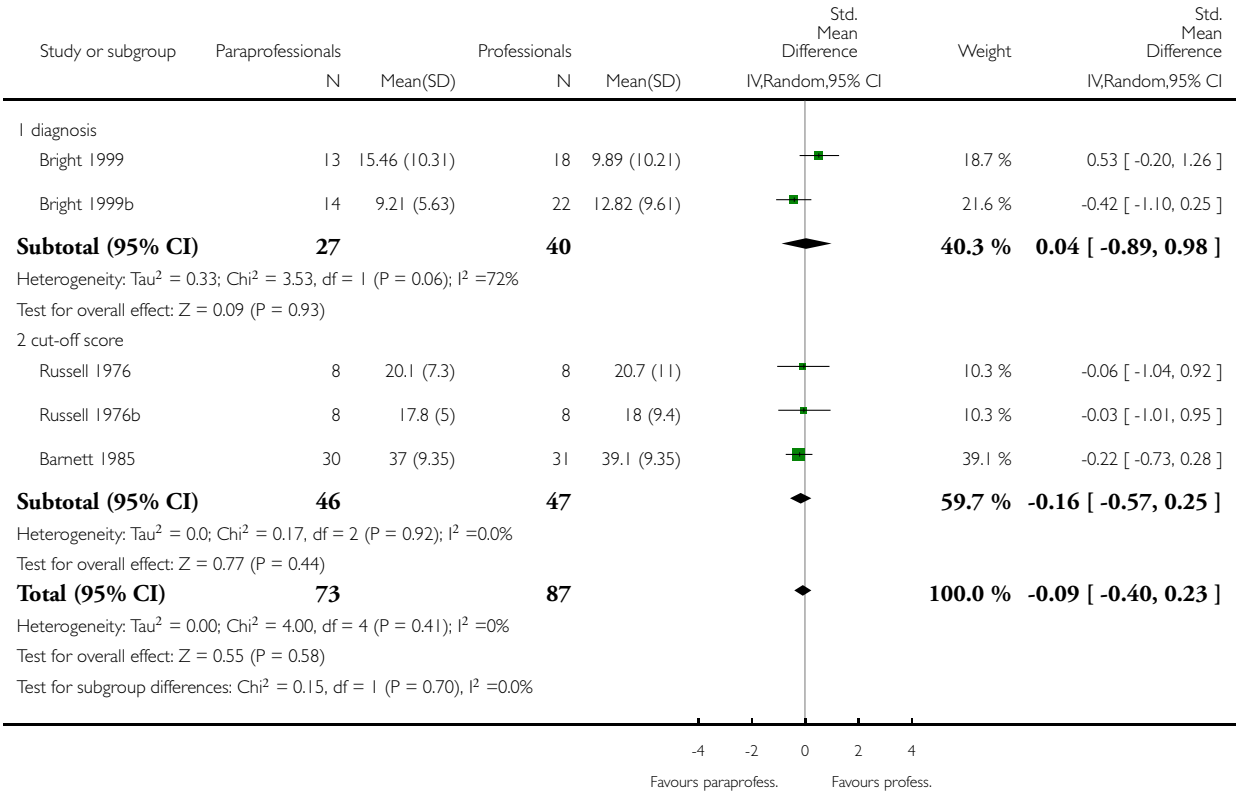


Analysis 11.1. Comparison 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion

Outcome: 1 Paraprofessionals vs professionals - post treatment



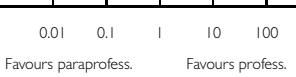
Analysis 11.2. Comparison 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 11 Sensitivity analysis: diagnosis or cut-off score as inclusion criterion

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

Study or subgroup	Paraprofessionals N	Professionals N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
1 diagnosis						
Subtotal (95% CI)	**0**	**0**				**Not estimable**
Heterogeneity: not applicable						
Test for overall effect: not applicable						
2 cut-off score						
Russell 1976	8	8	-1.6689 (0.9671)		14.5 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		13.5 %	0.09 [0.01, 0.70]
Barnett 1985	30	31	0.2902 (0.4627)		26.6 %	1.34 [0.54, 3.31]
Harris 1999	43	43	-1.0498 (0.4394)		27.2 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.2 %	0.19 [0.04, 0.89]
Subtotal (95% CI)	**109**	**111**			**100.0 %**	**0.34 [0.13, 0.88]**
Heterogeneity: Tau^2 = 0.65; Chi^2 = 10.24, df = 4 (P = 0.04); I^2 =61%						
Test for overall effect: Z = 2.23 (P = 0.025)						
Total (95% CI)	**109**	**111**			**100.0 %**	**0.34 [0.13, 0.88]**
Heterogeneity: Tau^2 = 0.65; Chi^2 = 10.24, df = 4 (P = 0.04); I^2 =61%						
Test for overall effect: Z = 2.23 (P = 0.025)						
Test for subgroup differences: Not applicable						

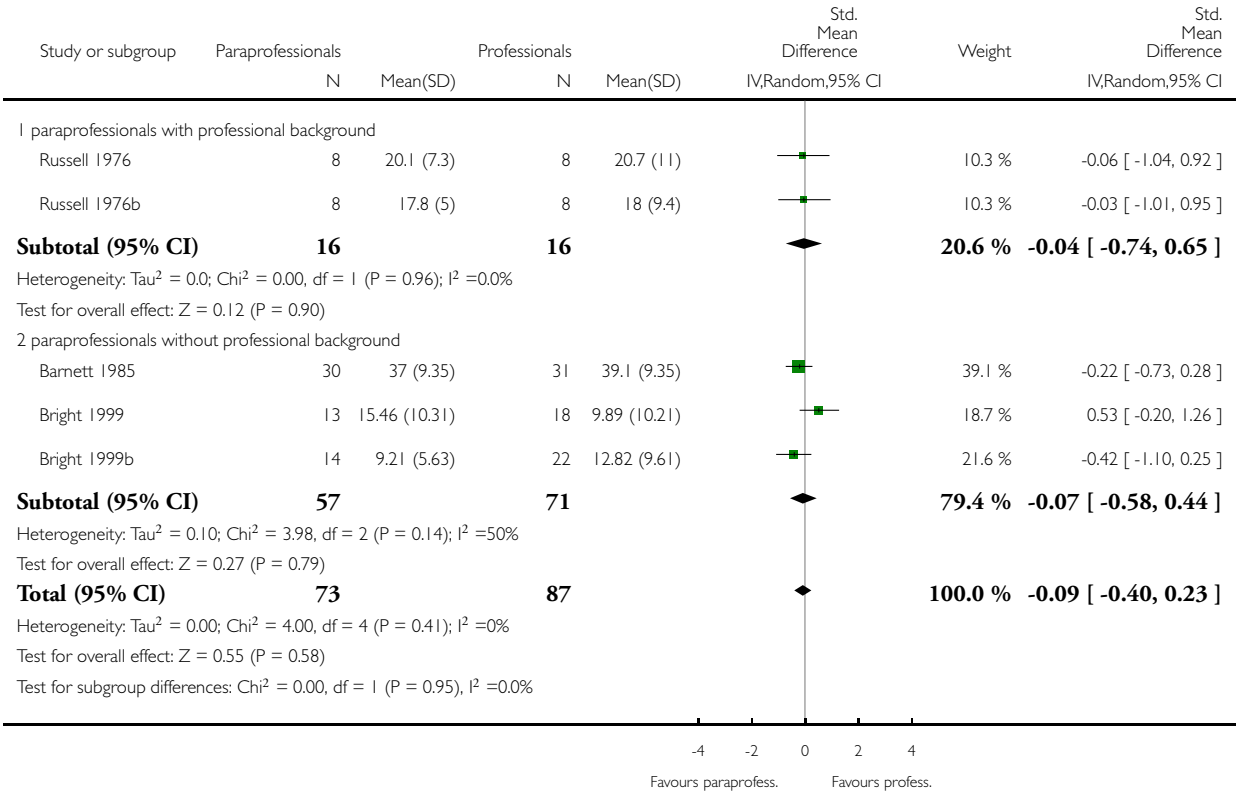


Analysis 13.1. Comparison 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background

Outcome: 1 Paraprofessionals vs professionals - post treatment

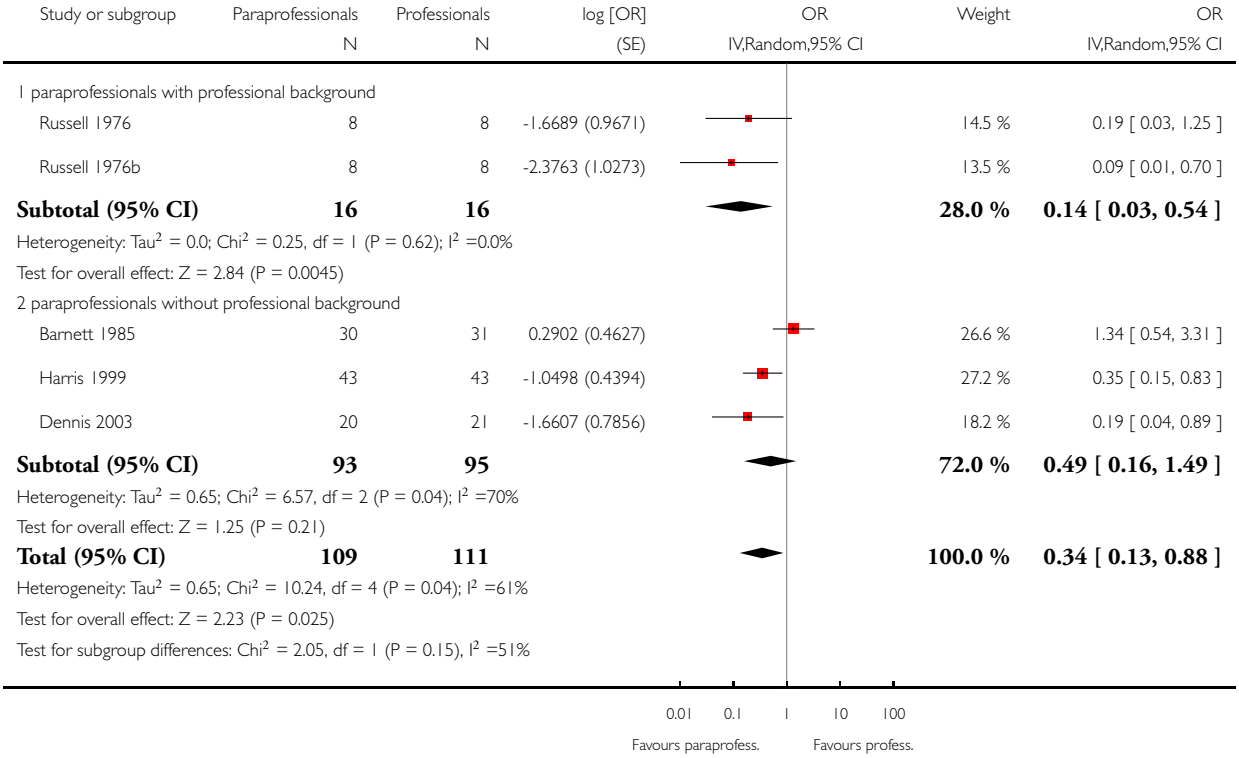


Analysis 13.2. Comparison 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 13 Subgroup analysis: paraprofessionals (a) with and (b) without professional background

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

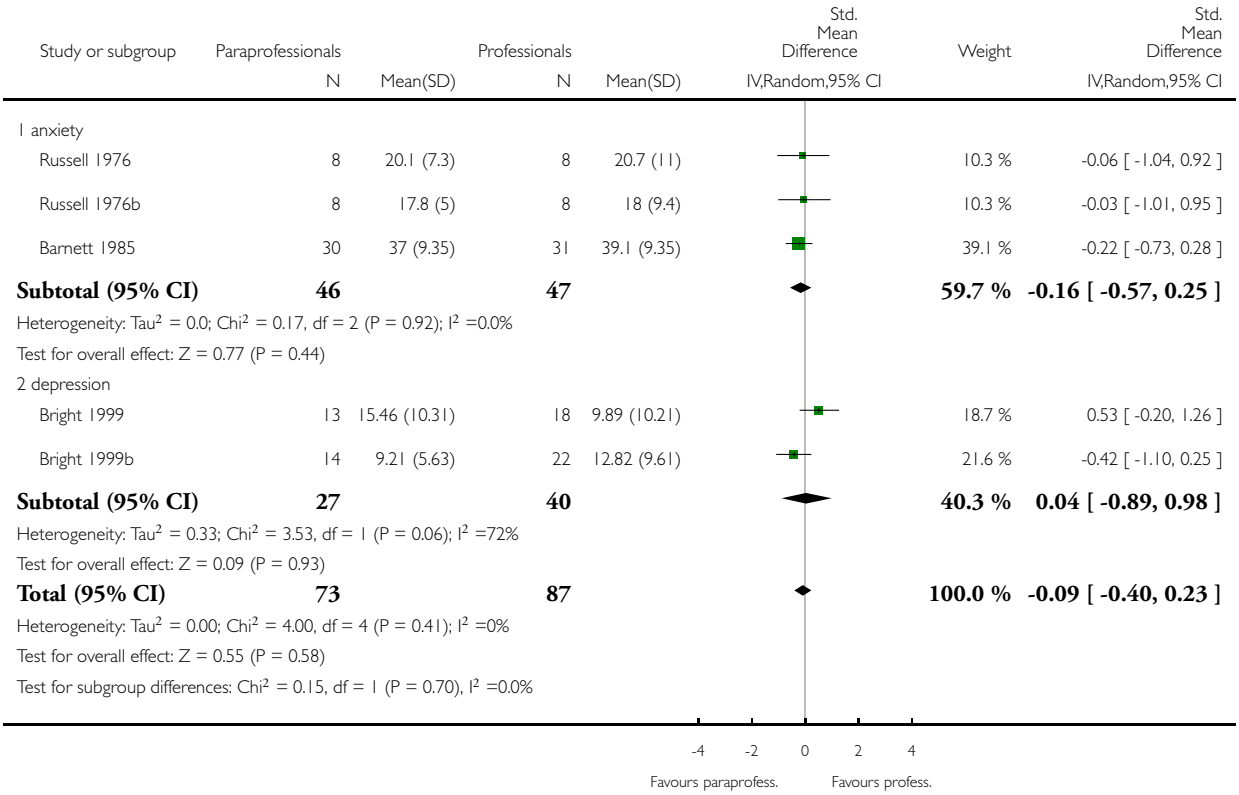


Analysis 14.1. Comparison 14 Subgroup analysis: (a) anxiety and (b) depressive disorders, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 14 Subgroup analysis: (a) anxiety and (b) depressive disorders

Outcome: 1 Paraprofessionals vs professionals - post treatment



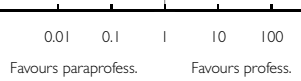
Analysis 14.2. Comparison 14 Subgroup analysis: (a) anxiety and (b) depressive disorders, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 14 Subgroup analysis: (a) anxiety and (b) depressive disorders

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

Study or subgroup	Paraprofessionals N	Professionals N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
1 anxiety						
Russell 1976	8	8	-1.6689 (0.9671)		14.5 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		13.5 %	0.09 [0.01, 0.70]
Barnett 1985	30	31	0.2902 (0.4627)		26.6 %	1.34 [0.54, 3.31]
Subtotal (95% CI)	**46**	**47**			**54.6 %**	**0.34 [0.06, 2.04]**
Heterogeneity: Tau^2 = 1.81; Chi^2 = 7.65, df = 2 (P = 0.02); I^2 =74%						
Test for overall effect: Z = 1.18 (P = 0.24)						
2 depression						
Harris 1999	43	43	-1.0498 (0.4394)		27.2 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.2 %	0.19 [0.04, 0.89]
Subtotal (95% CI)	**63**	**64**			**45.4 %**	**0.30 [0.14, 0.64]**
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.46, df = 1 (P = 0.50); I^2 =0.0%						
Test for overall effect: Z = 3.12 (P = 0.0018)						
Total (95% CI)	**109**	**111**			**100.0 %**	**0.34 [0.13, 0.88]**
Heterogeneity: Tau^2 = 0.65; Chi^2 = 10.24, df = 4 (P = 0.04); I^2 =61%						
Test for overall effect: Z = 2.23 (P = 0.025)						
Test for subgroup differences: Chi^2 = 0.02, df = 1 (P = 0.90), I^2 =0.0%						



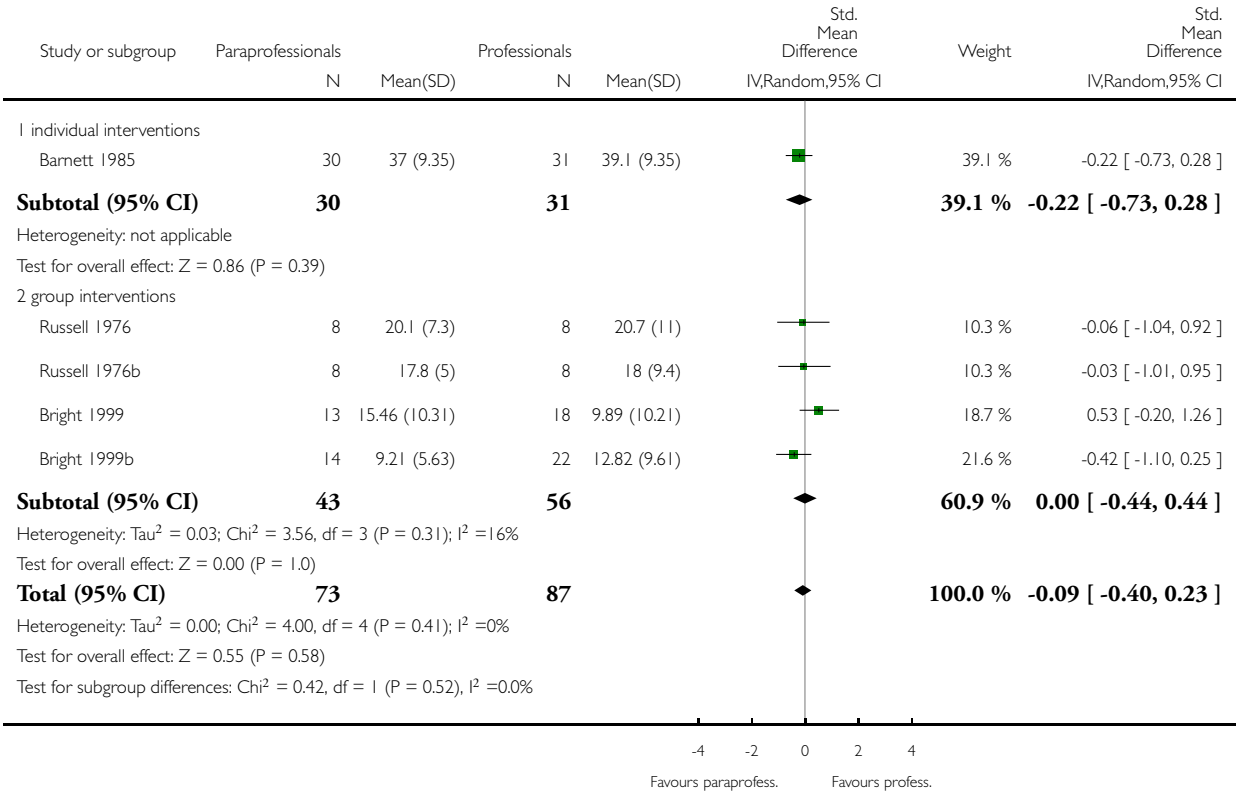
Analysis 15.1. Comparison 15 Subgroup analysis: (a) individual and (b) group interventions, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 15 Subgroup analysis: (a) individual and (b) group interventions

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 individual interventions							
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Subtotal (95% CI)	**30**		**31**			**39.1 %**	**-0.22 [-0.73, 0.28]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.86 (P = 0.39)							
2 group interventions							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**43**		**56**			**60.9 %**	**0.00 [-0.44, 0.44]**
Heterogeneity: Tau^2 = 0.03; Chi^2 = 3.56, df = 3 (P = 0.31); I^2 =16%							
Test for overall effect: Z = 0.00 (P = 1.0)							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: Tau^2 = 0.00; Chi^2 = 4.00, df = 4 (P = 0.41); I^2 =0%							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: Chi^2 = 0.42, df = 1 (P = 0.52), I^2 =0.0%							

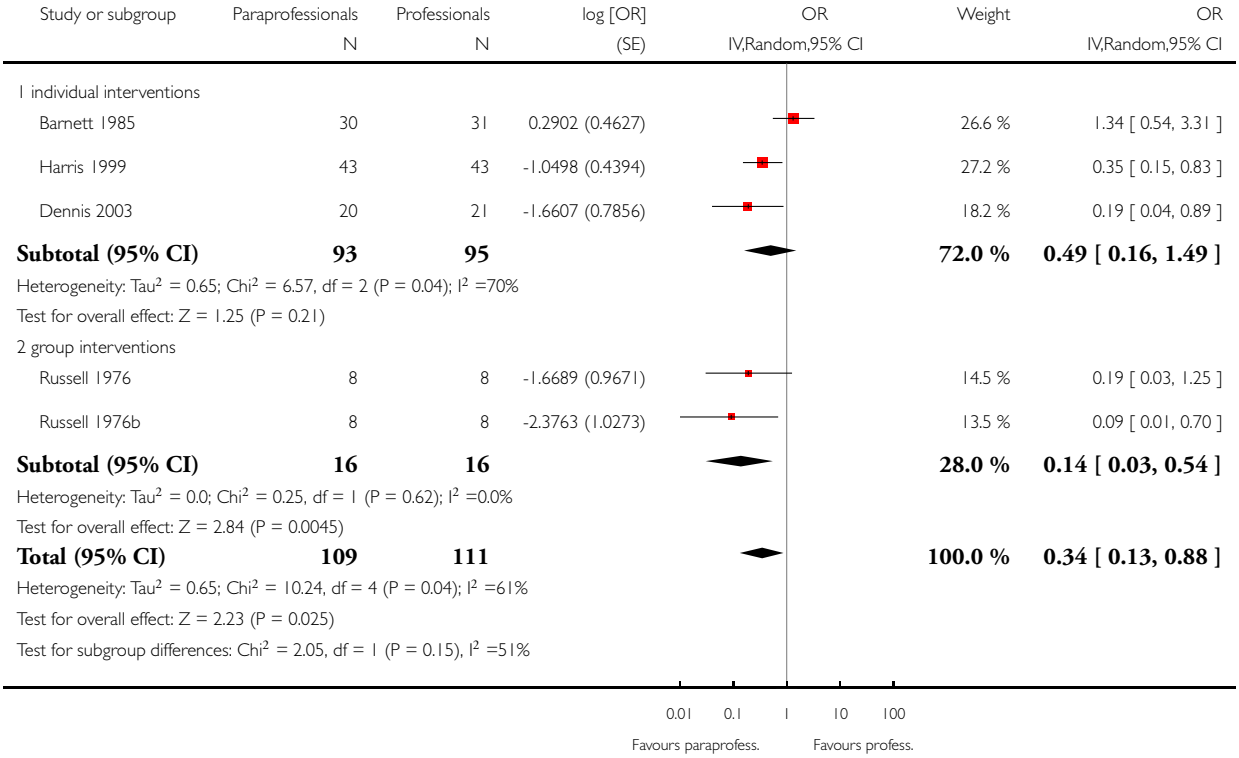


Analysis 15.2. Comparison 15 Subgroup analysis: (a) individual and (b) group interventions, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 15 Subgroup analysis: (a) individual and (b) group interventions

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment



Analysis 16.1. Comparison 16 Subgroup analysis: (a) same and (b) different interventions performed by paraprofessionals and professionals, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 16 Subgroup analysis: (a) same and (b) different interventions performed by paraprofessionals and professionals

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 same intervention by both paraprofessionals and professionals							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**43**		**56**			**60.9 %**	**0.00 [-0.44, 0.44]**
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 3.56$, df = 3 (P = 0.31); I^2 =16%							
Test for overall effect: Z = 0.00 (P = 1.0)							
2 different interventions by paraprofessionals and professionals							
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Subtotal (95% CI)	**30**		**31**			**39.1 %**	**-0.22 [-0.73, 0.28]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.86 (P = 0.39)							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); I^2 =0%							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: $Chi^2 = 0.42$, df = 1 (P = 0.52), I^2 =0.0%							

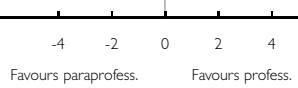
Analysis 17.1. Comparison 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 short term (= < 3 months)							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
2 moderate to long term (> 3 months)							
Subtotal (95% CI)	**0**		**0**				**Not estimable**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: Not applicable							

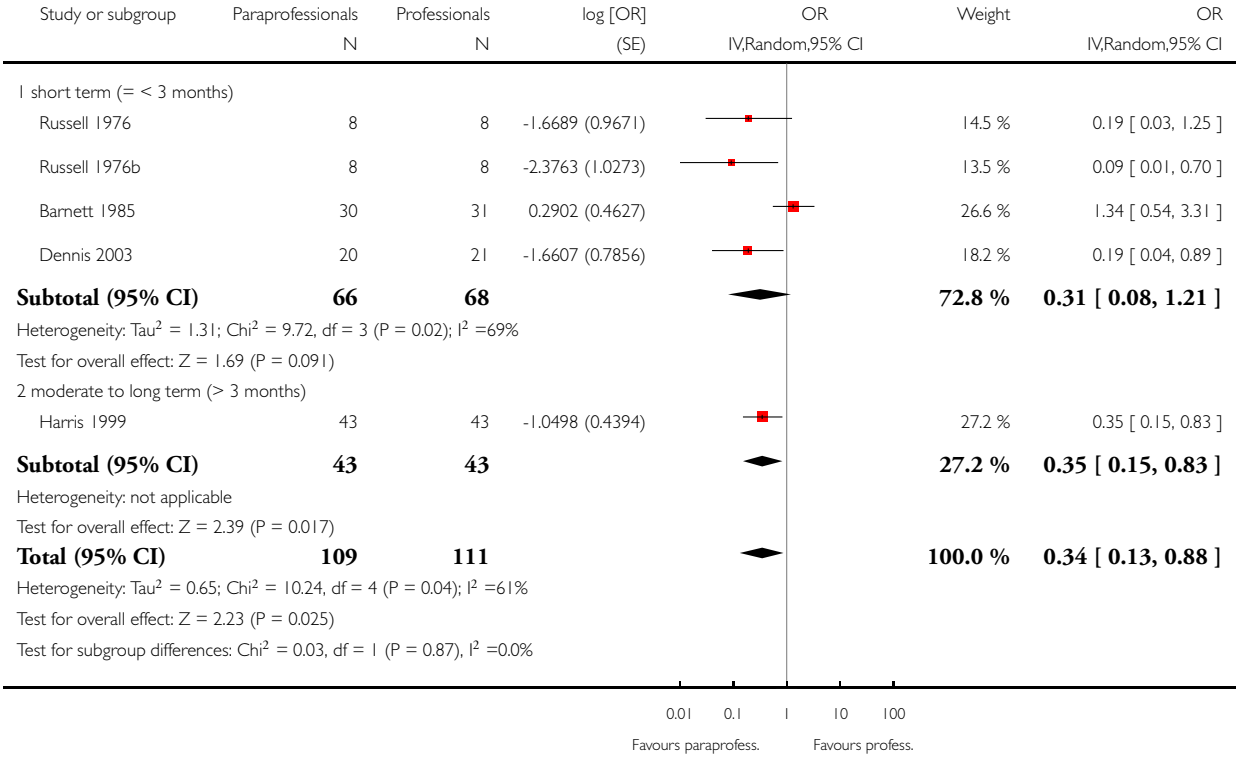


Analysis 17.2. Comparison 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 17 Subgroup analysis: (a) short term and (b) moderate to long term post treatment

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment



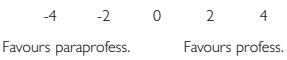
Analysis 19.1. Comparison 19 Subgroup analysis: gender, Outcome 1 Paraprofessionals vs professionals - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 19 Subgroup analysis: gender

Outcome: 1 Paraprofessionals vs professionals - post treatment

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
1 mixed							
Russell 1976	8	20.1 (7.3)	8	20.7 (11)		10.3 %	-0.06 [-1.04, 0.92]
Russell 1976b	8	17.8 (5)	8	18 (9.4)		10.3 %	-0.03 [-1.01, 0.95]
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		18.7 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		21.6 %	-0.42 [-1.10, 0.25]
Subtotal (95% CI)	**43**		**56**			**60.9 %**	**0.00 [-0.44, 0.44]**
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 3.56$, df = 3 (P = 0.31); $I^2 = 16\%$							
Test for overall effect: Z = 0.00 (P = 1.0)							
2 women							
Barnett 1985	30	37 (9.35)	31	39.1 (9.35)		39.1 %	-0.22 [-0.73, 0.28]
Subtotal (95% CI)	**30**		**31**			**39.1 %**	**-0.22 [-0.73, 0.28]**
Heterogeneity: not applicable							
Test for overall effect: Z = 0.86 (P = 0.39)							
3 men							
Subtotal (95% CI)	**0**		**0**				**Not estimable**
Heterogeneity: not applicable							
Test for overall effect: not applicable							
Total (95% CI)	**73**		**87**			**100.0 %**	**-0.09 [-0.40, 0.23]**
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 4.00$, df = 4 (P = 0.41); $I^2 = 0\%$							
Test for overall effect: Z = 0.55 (P = 0.58)							
Test for subgroup differences: $Chi^2 = 0.42$, df = 1 (P = 0.52), $I^2 = 0.0\%$							



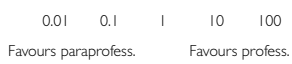
Analysis 19.2. Comparison 19 Subgroup analysis: gender, Outcome 2 Paraprofessionals vs control (waiting list/placebo) - post treatment.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 19 Subgroup analysis: gender

Outcome: 2 Paraprofessionals vs control (waiting list/placebo) - post treatment

Study or subgroup	Paraprofessionals N	Professionals N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
1 mixed						
Russell 1976	8	8	-1.6689 (0.9671)		14.5 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		13.5 %	0.09 [0.01, 0.70]
Subtotal (95% CI)	**16**	**16**			**28.0 %**	**0.14 [0.03, 0.54]**
Heterogeneity: Tau^2 = 0.0; Chi^2 = 0.25, df = 1 (P = 0.62); I^2 =0.0%						
Test for overall effect: Z = 2.84 (P = 0.0045)						
2 women						
Barnett 1985	30	31	0.2902 (0.4627)		26.6 %	1.34 [0.54, 3.31]
Harris 1999	43	43	-1.0498 (0.4394)		27.2 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.2 %	0.19 [0.04, 0.89]
Subtotal (95% CI)	**93**	**95**			**72.0 %**	**0.49 [0.16, 1.49]**
Heterogeneity: Tau^2 = 0.65; Chi^2 = 6.57, df = 2 (P = 0.04); I^2 =70%						
Test for overall effect: Z = 1.25 (P = 0.21)						
3 men						
Subtotal (95% CI)	**0**	**0**				**Not estimable**
Heterogeneity: not applicable						
Test for overall effect: not applicable						
Total (95% CI)	**109**	**111**			**100.0 %**	**0.34 [0.13, 0.88]**
Heterogeneity: Tau^2 = 0.65; Chi^2 = 10.24, df = 4 (P = 0.04); I^2 =61%						
Test for overall effect: Z = 2.23 (P = 0.025)						
Test for subgroup differences: Chi^2 = 2.05, df = 1 (P = 0.15), I^2 =51%						



Analysis 24.1. Comparison 24 Controlling for heterogeneity: paraprofessionals vs control - post treatment, Outcome 1 All data; generic inverse variance.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 24 Controlling for heterogeneity: paraprofessionals vs control - post treatment

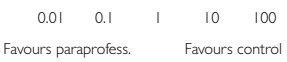
Outcome: 1 All data; generic inverse variance

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Russell 1976	8	8	-1.6689 (0.9671)		12.1 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		10.7 %	0.09 [0.01, 0.70]
Harris 1999	43	43	-1.0498 (0.4394)		58.7 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		18.4 %	0.19 [0.04, 0.89]
Total (95% CI)	**79**	**80**			**100.0 %**	**0.25 [0.13, 0.49]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 1.72$, df = 3 (P = 0.63); $I^2 = 0.0\%$

Test for overall effect: Z = 4.10 (P = 0.000042)

Test for subgroup differences: Not applicable



Analysis 25.1. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 1 Paraprofessionals vs control - post treatment: moderate to high quality (QRS =22-42) (n=3).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 25 Controlling for heterogeneity: sensitivity analysis - study quality

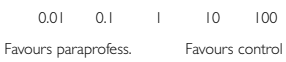
Outcome: 1 Paraprofessionals vs control - post treatment: moderate to high quality (QRS =22-42) (n=3)

Study or subgroup	Paraprofessional N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Barnett 1985	30	31	0.2902 (0.4627)		36.9 %	1.34 [0.54, 3.31]
Harris 1999	43	43	-1.0498 (0.4394)		37.9 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		25.2 %	0.19 [0.04, 0.89]
Total (95% CI)	**93**	**95**			**100.0 %**	**0.49 [0.16, 1.49]**

Heterogeneity: $Tau^2 = 0.65$; $Chi^2 = 6.57$, df = 2 (P = 0.04); $I^2 = 70\%$

Test for overall effect: Z = 1.25 (P = 0.21)

Test for subgroup differences: Not applicable



Analysis 25.2. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 2 Paraprofessionals vs control - post treatment: moderate to high quality (QRS=22-42) (n=2).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 25 Controlling for heterogeneity: sensitivity analysis - study quality

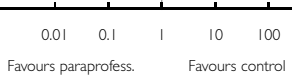
Outcome: 2 Paraprofessionals vs control - post treatment: moderate to high quality (QRS=22-42) (n=2)

Study or subgroup	Paraprofessional N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Harris 1999	43	43	-1.0498 (0.4394)		76.2 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		23.8 %	0.19 [0.04, 0.89]
Total (95% CI)	**63**	**64**			**100.0 %**	**0.30 [0.14, 0.64]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.46$, df = 1 (P = 0.50); $I^2 = 0.0\%$

Test for overall effect: Z = 3.12 (P = 0.0018)

Test for subgroup differences: Not applicable



Analysis 25.3. Comparison 25 Controlling for heterogeneity: sensitivity analysis - study quality, Outcome 3 Paraprofessionals vs control - post treatment: low quality (QRS = 0-21).

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 25 Controlling for heterogeneity: sensitivity analysis - study quality

Outcome: 3 Paraprofessionals vs control - post treatment: low quality (QRS = 0-21)

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Russell 1976	8	8	-1.6689 (0.9671)		53.0 %	0.19 [0.03, 1.25]
Russell 1976b	8	8	-2.3763 (1.0273)		47.0 %	0.09 [0.01, 0.70]
Total (95% CI)	**16**	**16**			**100.0 %**	**0.14 [0.03, 0.54]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.25$, df = 1 (P = 0.62); $I^2 = 0.0\%$

Test for overall effect: Z = 2.84 (P = 0.0045)

Test for subgroup differences: Not applicable

Analysis 26.1. Comparison 26 Final analyses, Outcome 1 Paraprofessionals vs professionals: post treatment - re-analysis.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 26 Final analyses

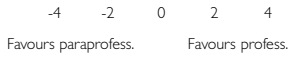
Outcome: 1 Paraprofessionals vs professionals: post treatment - re-analysis

Study or subgroup	Paraprofessionals N	Mean(SD)	Professionals N	Mean(SD)	Std. Mean Difference IV,Random,95% CI	Weight	Std. Mean Difference IV,Random,95% CI
Bright 1999	13	15.46 (10.31)	18	9.89 (10.21)		28.6 %	0.53 [-0.20, 1.26]
Bright 1999b	14	9.21 (5.63)	22	12.82 (9.61)		30.9 %	-0.42 [-1.10, 0.25]
Barnett 1985	30	36.4 (9.35)	31	33.9 (9.35)		40.6 %	0.26 [-0.24, 0.77]
Total (95% CI)	**57**		**71**			**100.0 %**	**0.13 [-0.39, 0.64]**

Heterogeneity: $Tau^2 = 0.10$; $Chi^2 = 3.99$, df = 2 (P = 0.14); $I^2 = 50\%$

Test for overall effect: Z = 0.49 (P = 0.63)

Test for subgroup differences: Not applicable



Analysis 26.2. Comparison 26 Final analyses, Outcome 2 Paraprofessionals vs control (waiting list/placebo): post treatment - re-analysis.

Review: Paraprofessionals for anxiety and depressive disorders

Comparison: 26 Final analyses

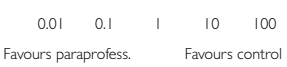
Outcome: 2 Paraprofessionals vs control (waiting list/placebo): post treatment - re-analysis

Study or subgroup	Paraprofessionals N	Control N	log [OR] (SE)	OR IV,Random,95% CI	Weight	OR IV,Random,95% CI
Harris 1999	43	43	-1.0498 (0.4394)		32.0 %	0.35 [0.15, 0.83]
Dennis 2003	20	21	-1.6607 (0.7856)		10.0 %	0.19 [0.04, 0.89]
Barnett 1985	30	31	-1.2378 (0.3261)		58.0 %	0.29 [0.15, 0.55]
Total (95% CI)	**93**	**95**			**100.0 %**	**0.30 [0.18, 0.48]**

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 0.47$, df = 2 (P = 0.79); $I^2 = 0.0\%$

Test for overall effect: Z = 4.91 (P < 0.00001)

Test for subgroup differences: Not applicable



WHAT'S NEW

Last assessed as up-to-date: 16 February 2005.

Date	Event	Description
23 March 2015	Amended	Corrected typographical error in the methods section.

HISTORY

Protocol first published: Issue 1, 2004

Review first published: Issue 2, 2005

Date	Event	Description
3 November 2008	Amended	Converted to new review format.
17 February 2005	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Peter den Boer designed the protocol and was undertaking the review. Durk Wiersma and Sacha Russo were the second and third author independently screening in- and exclusion criteria, assessing the quality of studies and performing data extraction. Durk Wiersma and Rob van den Bosch facilitated and supported conducting the review and provided comments on drafts.

DECLARATIONS OF INTEREST

None

SOURCES OF SUPPORT

Internal sources

- Department of Psychiatry, University Medical Centre Groningen, Netherlands.

External sources

- No sources of support supplied

INDEX TERMS

Medical Subject Headings (MeSH)

*Allied Health Personnel; Anxiety Disorders [*therapy]; Counseling; Depressive Disorder [*therapy]; Nurses; Psychotherapy [*methods]; Randomized Controlled Trials as Topic

MeSH check words

Humans